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ABSTRACT

This report presents findings from the first year of a pilot program permitting kindergarten age students to enter school at the first grade level (K-1 program for 5-year-olds). The purposes of the study were: (1) to compare the academic and social behavior of the early admissions (EA) students with that of the regular first graders; (2) to examine the validity of screening measures; and (3) to determine the satisfaction of parents, teachers, and principals with the services offered. It was found that the performance of EA students compared favorably with that of first grade students and that parents, teachers, and principals had a positive attitude towards the program. However, they tended to look on the program as an all day kindergarten rather than a first grade alternative and few students were promoted or accepted promotion to the second grade. In addition, it was not possible to identify with confidence screening measures predictive of success in the K-1 program. The pilot program is currently in its second year of operation. (Author/MP)

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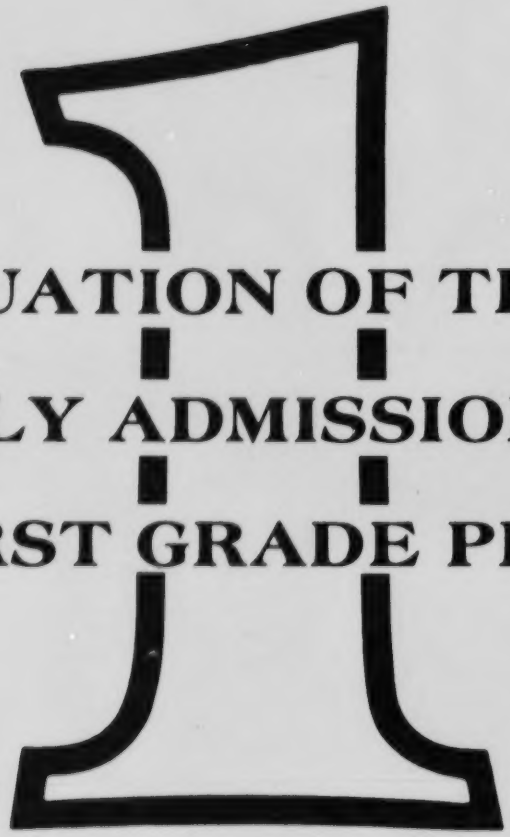

# EVALUATION OF THE EARLY ADMISSION TO FIRST GRADE PROGRAM

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# EVALUATION OF THE EARLY ADMISSION TO FIRST GRADE PROGRAM

by

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April, 1980

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# EVALUATION OF THE EARLY ADMISSION TO FIRST GRADE PROGRAM

## ABSTRACT

In response to a change in the Maryland state bylaw allowing five-year-olds to enter first grade, Montgomery County Public Schools developed a pilot program in school year 1978-79 to identify selection criteria for early admission. Two approaches to early admission were adopted. In Plan I, a small number of five-year-olds were allowed, at the request of their parents, to enter regular Grade 1 classes. Plan I was implemented in four schools. Plan II consisted of entire classes of five-year-olds who attended school for the full day. Six schools had Plan II classrooms.

At the end of the year, approximately 40 percent of the Plan I students and 16 percent of the students in Plan II were recommended for second grade. One third of the Plan I children and only 10 percent of the Plan II children were actually placed in second grade as the parents of the others chose not to have their child accelerated. At the beginning of the year, the achievement levels of the early admission (EA) children ultimately recommended for promotion to Grade 2 were below the comparison first graders; but by the end of the year, they were doing as well or better than the average first grade student. The best predictor of promotion to Grade 2 was the child's score on the Metropolitan Readiness Tests, although a number of children who received low Readiness scores in the fall also did well in the program. The Early Admission Program was favorably received by principals, teachers, and parents in spite of the fact that some staff and many parents were opposed to the idea of accelerating five-year-olds.

Based on the evaluation findings from the first year of the pilot program, the following preliminary recommendations were made:

1. Implement Plan I in schools interested in early admission to first Grade

   Based on the success of the Plan I classes, any school in the county should be permitted to institute such a program provided there is an interest in this approach, there is room in the first grade classrooms, and there is staff support for the concept.

   With regard to selecting students, fully adequate predictors of success have not yet been identified. At this time the most satisfactory method of selecting students appears to be parent nomination combined with teacher and principal judgment. The Metropolitan Readiness Tests could be used to confirm selection for early admission, but they could not be validly used as evidence to exclude a child.

2. Implement Plan II where appropriate

   Schools committed to early admission with large numbers of parents interested in the opportunity could institute the Plan II approach. Efforts should be taken to insure that these parents do not perceive the program merely as an all-day kindergarten.

3. Consider a variety of options for admitting children early to first grade

   Other possible forms of early admission which should be considered include placing five-year-olds in combined K-1 classes and having some stay all day or having five-year-olds in a regular kindergarten class but spending part of their day within a first grade room.

4. Explore the possibility of providing alternatives to the present half-day kindergarten

   The popularity of the program suggests there is a demand for kindergarten programs which differ from what is presently being offered. Parent response to the Early Admission Program suggests there is an interest in changes in the present kindergarten program, including lengthening the five-year-old's school day to a full day, introducing more academic material into the curriculum, or enriching the program with a broader range of experiences.

The pilot program is currently in its second year of operation. An evaluation report scheduled for September, 1980 will provide additional information on the program presenting both follow-up data on the original program participants and additional data on the second group of EA students.

# EVALUATION OF THE EARLY ADMISSION TO FIRST GRADE PROGRAM

## EXECUTIVE SUMMARY

### I. BACKGROUND OF THE PROJECT

On April 27, 1977, the Maryland State Board of Education revised the state bylaw concerning admission to the first grade. The revised bylaw states:

> Every child admitted to the first grade in a public elementary school in a Maryland county shall be at least 6 years old on or before December 31 of the year in which he applies for entrance. A local board of education may adopt a regulation permitting a 5-year-old child, upon request of the parent, to be admitted to the first grade if the local superintendent or his designee determines that the child has demonstrated capabilities warranting early admission.

In response to the revised state bylaw, Montgomery County Public Schools developed a pilot program to develop procedures for early admission to first grade. The program was implemented in ten schools in the 1978-79 school year. In the 1979-80 school year five schools are offering the program.

Two approaches to early admission were adopted. In Plan I, a small number of five-year-olds were allowed, at the request of their parents, to enter regular Grade 1 classes. Plan I was implemented in four schools.

Plan II consisted of entire classes of five-year-olds who attended school for the full day. The children in these classes were to progress at their own rate through the kindergarten and first grade curriculum. The expectation was that some children would master first grade material by the end of the year and could be promoted from the early admission class to second grade. Six schools had Plan II classrooms.

This document presents a brief summary of the results of the evaluation of the first year of the Early Admission to First Grade Program. The purposes of the evaluation were to:

A. Compare the academic performance and social behavior of the early admission (EA) students with that of regular first graders

B. Examine the validity of screening measures which could be used to predict success in an early admission program

C. Learn how the program was received by parents, teachers, and principals

A second evaluation report is scheduled for September, 1980. This report will provide both follow-up data on the original program participants and additional data on the second group of EA students.

## II. METHODS

### A. Number of Students in the Evaluation

A total of 18 early admission students from Plan I and 135 from Plan II were involved in the evaluation. Also included were 181 first graders for comparative purposes. The number of children in each of the EA classes and the number of comparison children selected from a first grade in that school are presented in Table E.1

An analysis of the demographic characteristics of the early admission and first grade students showed that they were generally representative of the first graders in the county as regards sex and race/ethnic group. Black children were slightly underrepresented in the early admission sample; Asian children were overrepresented. Hispanic children were proportionally represented.

### B. Assessments

Two instruments which could potentially be used to select children for early admission were administered to the students in October, 1978. The two tests were the Developmental Test of Visual-Motor Integration (VMI) and the Metropolitan Readiness Tests. Achievement at the end of the year was measured by a number of techniques including standardized achievement tests (the Metropolitan Achievement Tests) and a teacher-constructed behavior checklist. Other end-of-year measures were a rating scale which was included as part of a teacher questionnaire on promotion and a class ranking. Table E.2 presents a summary of the measures showing when each was administered and which groups were included.

TABLE E.1

Number of Children in Early Admission
and Comparison Group by School

| Schools | Early Admission | Grade 1 Comparison |
|---|---|---|
| Plan I | | |
| Olney | 1 | 9 |
| Poolesville | 2 | 25 |
| Seven Locks | 9 | 5 |
| Lynnbrook | 6 | 6 |
| Total | 18 | 45 |
| Plan II | | |
| Cashell | 22 | 21 |
| Stedwick | 21 | 25 |
| Takoma Park | 24 | 22 |
| Twinbrook | 22 | 24 |
| Whetstone | 20 | 19 |
| Wyngate | 26 | 25 |
| Total | 135 | 136 |
| TOTAL | 153 | 181 |

TABLE E.2

Summary of Measures

| Measure | Time of Data Collection | Groups Who Received |
|---|---|---|
| Developmental Test of Visual-Motor Integration (VMI) | Beginning of school year | All EA classes |
| Metropolitan Readiness Tests | | |
| Auditory | | |
| Visual | Beginning of school year | All EA classes |
| Language | | All Grade 1 Comparisons |
| Quantitative | | |
| Early Childhood Checklist | | |
| Mathematics | | |
| Language | | |
| Social Studies | | Plan II EA classes |
| Science | End of school year | Plan II Grade 1 Comparisons |
| Work Habits | | |
| General Social Development | | |
| Metropolitan Achievement Tests | | |
| Reading | | All EA classes |
| Mathematics | End of school year | All Grade 1 Comparisons |
| Language | | |
| Teacher Promotion Questionnaire | End of school year | Teachers completed for every child in EA class |
| Rank Order in Class | End of school year | Teachers rank ordered each Plan II EA classroom |

## III. FINDINGS

### A. Promotions to Grade 2

At the end of the year, 25 of the EA children (16 percent) were recommended for second grade. Slightly more than one-fourth were from Plan I schools. The schools varied in the number of children they recommended for Grade 2; the number ranged from 0 to 7. A disproportionate number of children of Asian descent were recommended for Grade 2. Of the 25 children recommended, 9 parents refused acceleration, leaving 16 EA children (10 percent) who were actually placed in Grade 2.

There were large differences between the Plan I and Plan II schools in the proportion of children recommended for Grade 2. Plan I schools recommended roughly 40 percent of their EA students for placement in second grade. In contrast, Plan II schools recommended 13 percent of their children. These differences can not legitimately be interpreted to mean that the Plan I programs were more effective. Differences between the two plans were expected because of the procedures employed in selecting EA students in each plan. Plan I schools served a small group of children who were perceived to have a high likelihood of success. Plan II schools served a broader range of achievement levels; and, therefore, the proportion of children eventually promoted could have been expected to be lower.

Differences between Plan I and Plan II also appeared when the actual promotions were compared to the recommendations. Only one recommendation was declined across the Plan I schools. Across the Plan II schools, nearly as many parents declined the school's recommendation as accepted it. Parent commitment to the prospect of acceleration was demonstrated by Plan I parents in their decision to enroll their five-year-olds directly in a first grade. Parents of Plan II students apparently had more doubts about moving their child into a grade which would separate the child from age-mates.

### B. Achievement of the Early Admission Students

As a group, the early admission students were below the comparison first graders at the beginning of the year. This is based on the comparison of the group means on the four tests of the Metropolitan Readiness Test. At the end of the year, the situation was much the same. The first grade averages on the Metropolitan Achievement Tests and on the teacher-constructed Early Childhood Checklist exceeded those for the EA children. At the close of school, the EA teachers judged their students to be about midyear first grade in their reading, mathematics, and general academic ability but beginning year first grade in social development. The averages for all measures for the Early Admission children and the first graders are presented in Table E.3.

The lower achievement of the early admission students at the end of the year was consistent with the observations conducted in the EA classrooms. The observations indicated that in general the EA classes at the end of the year were covering material appropriate for first graders in the middle of the year. Given this, it is not surprising that the EA children were somewhat below the first graders in overall achievement.

TABLE E.3

Average Scores on Assessment Measures

| Beginning-of-Year Measures | Early Admission | | | | First Grade |
|---|---|---|---|---|---|
| | Total Group (N=153) | Plan I (N=18) | Plan II (N=135) | Recommended to Grade 2 (N=25) | Total Group (N=181) |
| **Beginning-of-Year Measures** | | | | | |
| VMI | 10.2 | 10.9 | 10.1 | 11.2 | -[a] |
| Metropolitan Readiness | | | | | |
| Total | 57.7 | 62.5 | 57.1 | 68.7 | 72.5 |
| Auditory | 18.3 | 21.2 | 17.9 | 23.0 | 23.1 |
| Visual | 14.1 | 15.5 | 14.0 | 17.1 | 18.9 |
| Language | 11.8 | 11.9 | 11.7 | 12.6 | 13.8 |
| Quantitative | 13.4 | 13.8 | 13.4 | 16.2 | 17.3 |
| **End-of-Year Measures** | | | | | |
| Teacher Ratings | | | | | |
| Reading | 2.9 | 3.7 | 2.8 | 4.8 | -[a] |
| Arithmetic | 3.0 | 3.4 | 3.0 | 4.4 | -[a] |
| General Academic | 2.8 | 3.5 | 2.7 | 4.7 | -[a] |
| Social-Emotional | 2.4 | 2.8 | 2.3 | 4.2 | -[a] |
| Metropolitan Achievement | | | | | |
| Total | 70.6 | 78.2 | 69.6 | 101.3 | 88.2 |
| Reading | 26.0 | 30.2 | 25.4 | 43.4 | 34.8 |
| Mathematics | 19.8 | 21.9 | 19.5 | 26.4 | 24.8 |
| Language | 24.6 | 26.1 | 24.4 | 31.5 | 28.2 |
| Early Childhood Checklist | | | | | |
| Total | -[b] | -[b] | 40.0 | 54.1[c] | 50.4 |
| Academic Total | -[b] | -[b] | 30.5 | 42.4[c] | 39.3 |
| Social Total | -[b] | -[b] | 9.2 | 11.6[c] | 11.2 |

[a]Not given to first graders

[b]Not given to Plan I

[c]N=18

Averages, however, do not tell the entire story for the early admission children. Within this group, some individual children achieved a level of performance higher than that of the average first grader and even more EA children were within the range of the achievement levels represented in the first grade. Figure E.1 presents the distribution of the total score on the Metropolitan Achievement Test which was given at the end of the year. Separate distribution are presented for the EA and first grade students. The scores of EA children recommended to second grade but whose parents declined acceleration are indicated along with the EA children actually promoted to Grade 2. The extent of overlap between the distribution of scores for the EA and first grade students indicates that some movement between the grade levels is justified—at least as far as the children's academic achievement is concerned.

When the performance of all the EA children recommended for promotion was compared with that of their classmates and the first grade comparison group, the results indicated that the program had reached its objective for these children. At the beginning of the year, the children who would be recommended for Grade 2 were operating at a level slightly above average for their class but slightly below the first grade. At the end of the year, the EA children recommended for second grade had higher achievement levels than the average first grader who would be their classmate. All indications are that, as a group, this select group of EA children was ready for second grade. It should be noted, however, that there were other EA children with comparably high levels of achievement who were not recommended for second grade.

C. Utility of the Screening Instruments

One of the objectives of the study was to evaluate several tests with respect to their ability to identify five-year-olds for early admission. If the children who scored well on a test at the beginning of the year were the children who went on to do well in the program, then the tests can be considered as useful and valid predictors of achievement. Two of the potential screening tests examined in this evaluation were the Developmental Test of Visual-Motor Integration (VMI) and the Metropolitan Readiness Test.

One indicator of success in the early admission program was whether or not the child was recommended for second grade. When each of the five potential screening instruments (the VMI and four tests of the Metropolitan Readiness) was evaluated individually for its relationship with a recommendation for second grade placement, the results were not encouraging. The most successful measures were the Total Scores on the four Metropolitan Tests, the Auditory Test, and the Quantitative Test with correlations of only .30, .28, and .27, respectively. The VMI proved to be the least useful.

The limited relationship between the screening test and the recommendation is illustrated in Figure E.2 which shows the distribution of scores for the total on the Metropolitan Readiness Test, the best of the predictors. If the test was highly valid as a predictor of a later recommendation for promotion, most of the children who scored well on the test would have been so recommended (and vice versa, those recommended would have had the highest scores). As Figure E.2 shows this was clearly not the case.

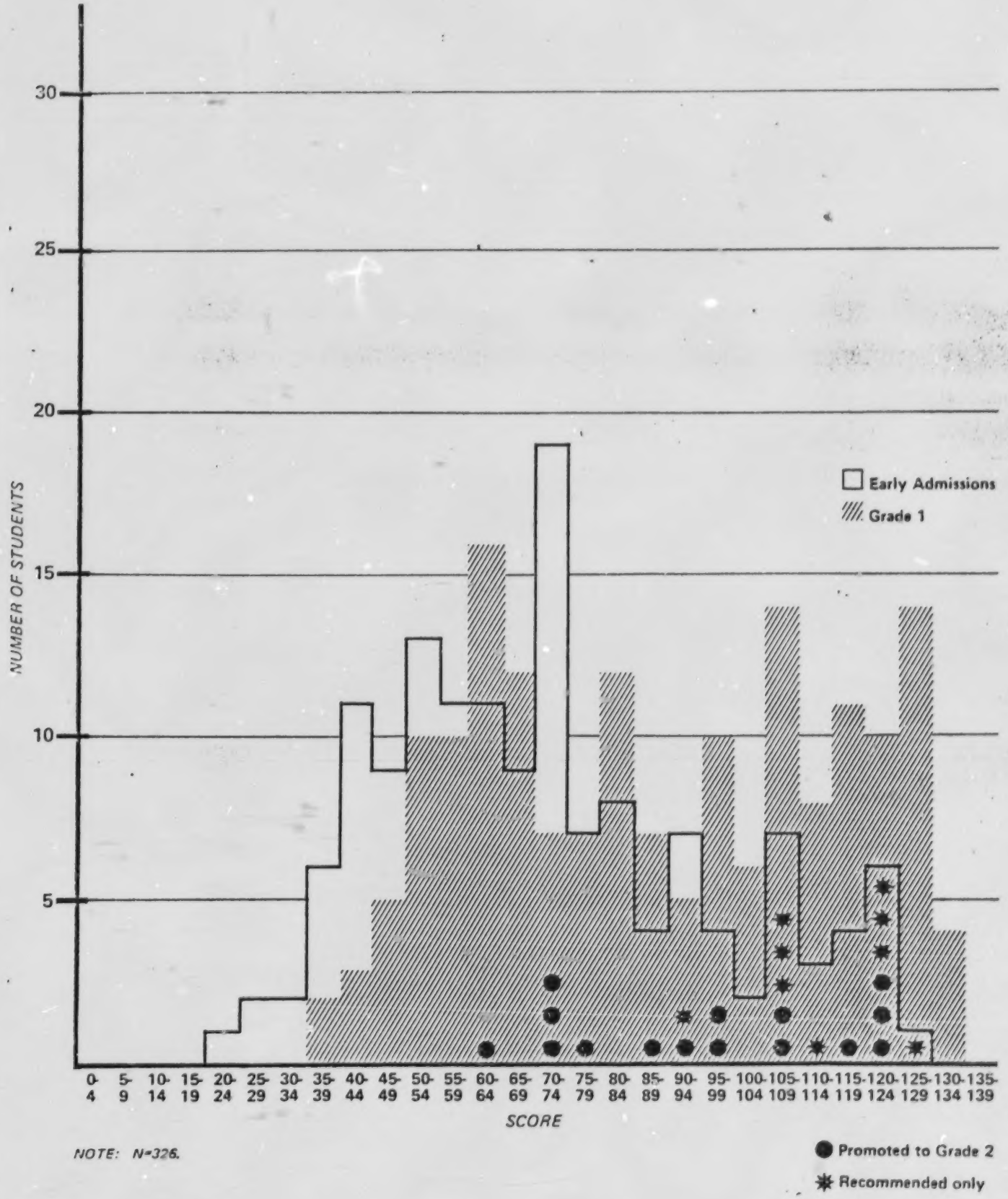




Figure E.1: FREQUENCY DISTRIBUTIONS OF METROPOLITAN ACHIEVEMENT SCORES (Total)

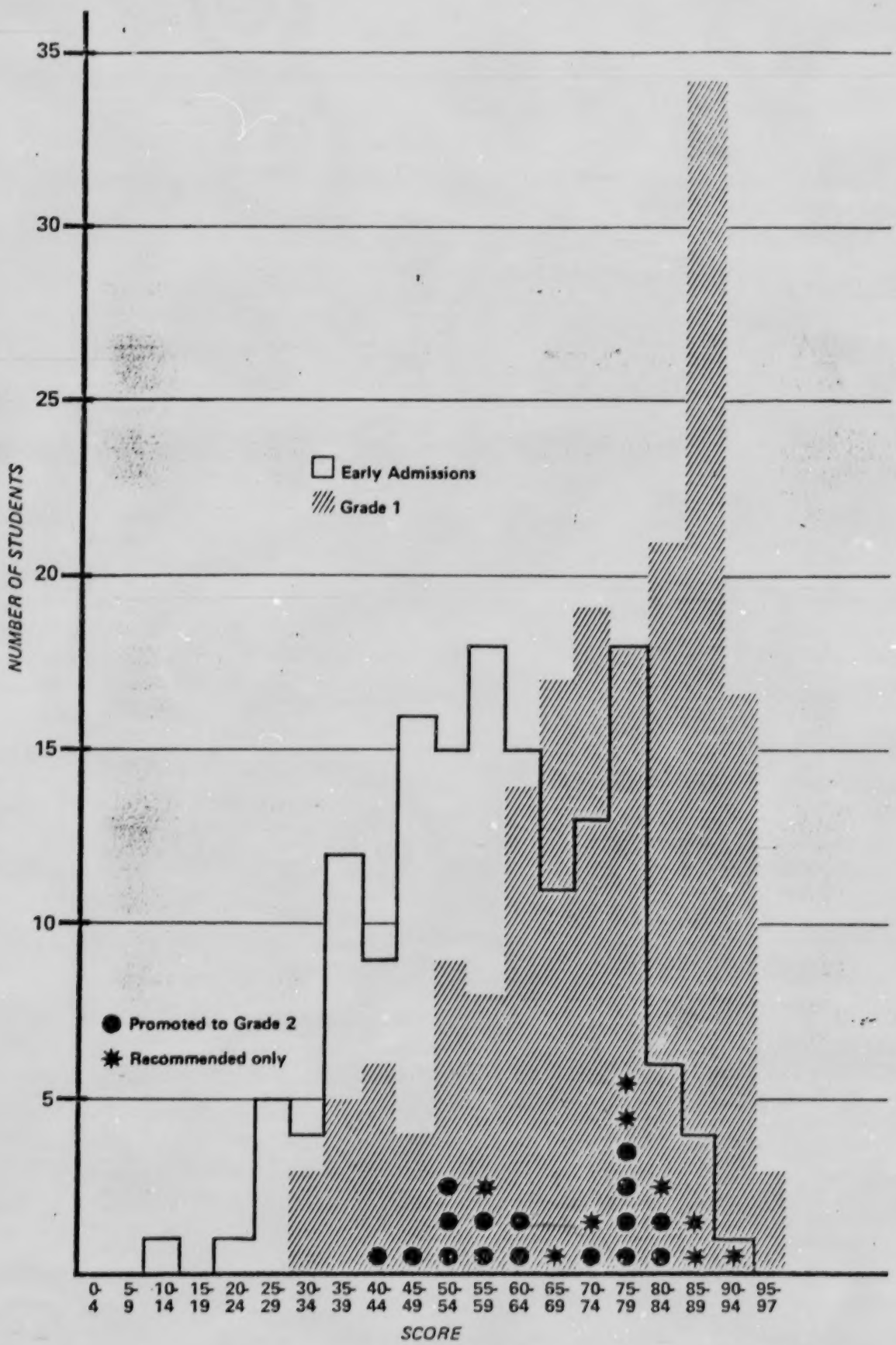


Figure E.2: FREQUENCY DISTRIBUTION ON METROPOLITAN READINESS TOTAL SCORE BY GRADE

Recommendation for second grade promotion is strongly influenced by the standards and attitudes of each child's principal and teacher. Because of this, recommendation per se is not the best measure by which to assess success in the program. Better measures are the results on the tests administered at the end of the year.[1] The correlations between performance on the screening instruments and these measures of achievement at the end of the year were somewhat higher, although they still were not good. The highest beginning to end-of-year correlation was .68 between the total of the four Readiness Tests and the total of the three Metropolitan Achievement Tests. Overall, the best predictor measures were the total scores on the Metropolitan Readiness followed by the Quantitative and Auditory Tests.

An alternative approach to validating the screening instruments involved the establishment of hypothetical cutoff scores on the four Readiness Tests. For each school, its first grade mean on each of the four subtests was used as a cutoff point. Counts were made of the number of early admission children who exceeded the first grade mean on 0, 1, 2, 3, or 4 of the tests administered in the fall. These children were also classified with respect to their performance at the end of the year. The results indicated that children who did very well on the Readiness tests also tended to do very well in the program (regardless of whether they were recommended for Grade 2). However, some children who didn't do outstandingly well on the Readiness tests performed very well in the program. These "late bloomers" deflated the predictive ability of the tests considerably. The problem for identification and decision-making for individual children was greatest for those who did not do extremely well on the screening tests. Most went on to achieve at average levels; however, some went on to do very well.

A third approach taken to assess the utility of the predictor measures involved statistically distinguishing between the early admission and first grade students in a school. Test scores were combined in such a way as to make the two groups maximally distinct. Those students looking more like the alternative group were then identified. Using only the beginning-of-the-year scores, the two grades could be distinguished with only a moderate degree of success. Depending on the school, from 15 to 33 percent of the EA students were identified as more like first graders. On the other hand, 13 to 37 percent of the first graders were classified as more like early admission students.

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[1]One particularly interesting finding emerged when the interrelationships among the various tests were examined. These were a high degree of association between the Metropolitan Achievement Tests and the measures which used teacher's judgment of a child's ability. The highest correlation was .77 (Teacher rating of Reading Level with Total Score). This finding suggests teacher judgments for this age group are a valid and accurate source of information.

Attempts to statistically distinguish the early admissions students and first graders within each school based on the end-of-the-year measures (the three tests of the Metropolitan Readiness and the six sections of the Early Childhood Checklist) showed that the two grade levels were very different at Cashell, Stedwick, Takoma Park, and Whetstone. The two grade levels at Twinbrook and Wyngate were less distinct. At Twinbrook, 35 percent of the EA students looked more like first graders in that school; at Wyngate, the proportion was 48 percent. Appropriately, these were the two schools that recommended the largest number of children for promotion to Grade 2. This type of analysis, while not particularly useful for identifying early admission students at the beginning of the year did provide additional support for the promotion patterns across the schools. Some schools had considerably more EA children who were similar to their first graders than other schools.

The conclusions to be drawn with regard to the two potential screening instruments examined in this study is that the Metropolitan Readiness Test could be used for this purpose if one is willing to accept some degree of uncertainty in the results. The Readiness Test correctly predicted a high level of achievement for children who scored exceptionally high. For those who received average scores, the prediction was less precise, failing in some cases to identify children who performed well in the program. The VMI, on the other hand, is not suited to the purpose of identifying children for early admission.

The utility of any screening tests is closely linked to the problem of what level of performance to require for early admission. The issue of whether a five-year-old should be at the level of the first grade in his or her own school or the level of the average first grader in the county is addressed in one of the following sections of this paper.

D. Parent, Teacher, and Principal Response to the Program

The attitude of most of the adults involved with the program was highly favorable. Parents were pleased with the benefits the program provided for their child. In particular, they were pleased with the academic benefits, the social benefits such as increased self-confidence, and the program features such as individualization. Teachers were pleased because they felt the program provided an opportunity to work with the child all day and to better meet the needs of individual children. Principals felt the program's strength rested in the opportunity to introduce Grade 1 material, place children appropriately, and provide a full-day of experiences.

There were few problems with the program as perceived by the parents. Over half could not even name an aspect which they considered unsuccessful. Of those who could, some were displeased with aspects of program operation such as insufficient parent contact or too large a class. A few were displeased with the teacher in some way.

Teachers and principals were largely in agreement in identifying the weaknesses in the program although teachers unanimously agreed that they had not had any teaching problems with the program. Teachers and principals mentioned the need for an aide, the need for more money for materials, and the need for more communication between the schools and the central office. Both groups were also bothered by the late start of the project and the confusion it caused.

Parents, teachers, and principals were asked questions about promotion to Grade 2. The answers given indicate that there was some difference of opinion among these groups and the program developers and administrators. Although the program had as its objective the preparation of children for Grade 2, 46 percent of the parents stated they would not allow promotion to second grade. Another 25 percent were undecided. Most of the teachers and principals believed that only a few of the early admission students would be promoted to Grade 2.

## E. Limitations of the Study

### 1. Screening for Social Development

Given the dual importance of the social and intellectual dimensions of the young child's personality, criteria for early admission will need to include an assessment of socioemotional development. The evaluation included a measure of social development at the end of the year, but there was no measure included in the beginning-of-the-year assessments; and, therefore, there were no analyses of how well social development can be assessed and used as a predictor measure. The problem is that there are no tests of social development which can be administered in 10 or 20 minutes to predict the ways a five-year-old will respond to the many different behavioral requirements of a classroom.[1] Possibly, a measure of social development would have been able to improve the predictive ability of the screening measures. Some type of social assessment will surely need to be included when early admission is implemented on a larger scale.

### 2. Generalizability of the Findings

The generalizability of the evaluation findings may be restricted by several considerations. Research findings are considered to be most generalizable to similar populations and similar situations. The implementation of the pilot early admission project differed in several signicant ways from how early admission to first grade might actually be implemented. For the most part, the impact of these differences on the generalizability of the findings is unknown.

One difference was the timing of the administration of the potential instruments. Assuming a five-year-old's placement would need to be decided prior to school entrance, any early admission testing would have to take place over the summer. The early admission children in the pilot program were tested in October after one month of school which included some switching of class assignments along with the confusion of project start-up. If there was any effect of the delayed testing, it is likely to have been in the direction of increasing the similarity between beginning and end-of-year results. If this happened, the tests are even less predictive than the evaluation found them to be.

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[1]The evaluation for 1979-80 is utilizing several approaches to overcome the lack of an overall measure of a child's social development, but the success of these approaches is yet to be determined.

Another substantial difference between the pilot project and future early admission where a five-year-old would enter directly into a first grade was that the great majority of the children in the evaluaton were not in a regular first grade with six-year-olds. They were in a special classroom with children their own age. The program they received was a combination of the kindergarten and Grade 1 curriculum; it was not a straight Grade 1 program. There are so few children in the evaluation who had only first grade classmates and a first grade curriculum that it is difficult to say anything conclusive about the effect of placing five-year-olds in a first grade room.

The evaluation findings definitely show that some five-year-olds can be provided with a particular kind of experience such that at the end of one year of school they are functioning at or near the level of the first graders in that school. It is not known whether that phenomena would have occurred had the experience been a first grade room instead of the particular EA class in which they enrolled. As the findings show, it did not even occur for all of the EA classrooms. This suggests that there were important qualitative differences in program implementation across the schools.

## IV. ESTABLISHING A COUNTYWIDE PLAN FOR EARLY ADMISSION

### A. The Need for a Separate Standard for Each School

One of the decisions which must be made in establishing an early admission program is whether the criteria for selection should be individually determined for each school or whether one set of criteria should be adopted for the entire county. This problem could not be fully addressed by the evaluation findings because the resolution depends at least as much on educational philosophy as it does on hard data. What the findings show is that there are different levels of achievement from one school to another even for five- and six-year-olds. Given this, a five-year-old could easily be an average first grader at a school with a relatively low achievement level and not be suited for first grade at a school with a relatively high achievement level. The same situation applies with regard to promotion from the early admission program: children who looked like they would be good candidates for second grade at one school were not qualified at another school.

A countywide standard would mean that the number of children identified at a school would vary as a function of the school's achievement level. Few children would be identified at schools with the lower achievement levels. If the standard were made higher than the county average, very few, if any, children from these schools would be eligible.

This situation is further complicated because the discriminant analysis showed that at the beginning of the year in the schools with the lower achievement levels there was more overlap between the kindergarten and first grades than in schools with the higher achievement levels. In the two schools in the study with the relatively low achievement levels, there were more first graders, at the beginning of the year, who resembled the EA children and vice versa. In this kind of situation, children would more easily fit in with the next grade level because the boundaries between the grades are less distinct; but it is in these schools that few children would be selected with a countywide standard.

One standard, such as the county mean for the first grade, would also pose problems for children from schools with relatively high achievement levels. Use of the county mean would likely result in the identification of a large number of children at these schools. Some of these five-year-olds, however advanced relative to the rest of the county, would not be at the level of the average first grader in their particular school. Even so, the analysis using the hypothetical cutoff scores showed that the EA children thus identified would not be far behind and so they would probably fit in as slightly below average first graders. This raises the question of whether it would be better for a five-year-old to be one of the most advanced children in the kindergarten class or one of the less advanced in Grade 1.

Separate criteria for each school would allow the identification of those five-year-olds who are like the first graders at that school. Since that is the first grade classroom where those children would be placed, this seems to be a reasonable standard of comparison. If a child is in a school with a lower achievement level and the child's parents move during the school year, the child might not fit in with the first grade class at the new school. However, the same fate could befall a six-year-old first grader making that kind of a move.

Another negative feature associated with the use of the separate criteria would be the logistics involved in obtaining the comparison data on a regular basis. First graders would have to be tested every year or every few years to learn what their achievement levels are. The size of such an undertaking should not be overlooked.

The answer to the question of how many standards to adopt is closely linked to the purpose of identifying children for early admission. If the purpose is perceived as similar to the identification of the gifted and the provision of special programs for gifted children, then it makes sense to talk about an absolute standard. If the purpose is to place five-year-olds in a classroom most suited to their cognitive and socio-emotional development, then school-specific criteria would be more appropriate. The study findings show that a somewhat different set of children will be identified depending on the criteria used.

B. The Concept of Early Admission

The evaluation report would be remiss if it did not report the intensity of sentiment which was generated over the question of whether any five-year-olds should be accelerated apart from their age-mates. The ongoing debate can be read between the lines (and on the lines) throughout the findings: the vastly different number of promotions to Grade 2 from the different schools; the number of promotions refused; and the parents', teachers', and principals' opinions on the promotion question and their comments about the program. The opposition argument had two components: opposition to acceleration in general (e.g., leads to problems in adolescence, in college, etc.) and to acceleration for children of this age in particular.[1]

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[1]This controversy was also pervasive throughout the public hearings conducted by the State Board of Education on the proposed change in the state bylaw.

Much of the debate over the concept of early admission revolved around the importance of the child's social and emotional development. There seemed to be no doubt that there are five-year-olds who are academically ready for first grade, but the social maturity of these children is an equally important consideration and not necessarily on a par with their cognitive skills. The most extreme position is that simply because a child is five he or she de facto cannot be at the socio-emotional level of a first grader. Other positions recognize the variety of developmental levels in the five-year-old population, while simultaneously acknowledging the importance of not pushing a child beyond his or her own level.

The overwhelmingly positive response to the program in spite of sharp opposition to one of its major objectives can be attributed to only one thing--people perceived and/or implemented the program as something other than what it was intended to be. For some, it might have represented an enriched or accelerated kindergarten. For some, it might have been just an all-day kindergarten. Several MCPS staff speculated that, for some parents, the program represented a babysitting service and eliminated the need for child care during the other half of the day. It is clear that the nature and structure had a broad appeal regardless--or perhaps in spite of--the goal of preparing five-year-olds for second grade. The pilot program which was designed to be short-lived was tremendously popular. Ironically, the early admission component to an actual first grade which was designed to be formalized and implemented on a countywide scale was and still is embroiled in controversy. Suffice it to say, there appears to be no easy resolution to this disagreement.

It would be premature at this point to make final recommendations with regard to early admission and the criteria to be used in selecting candidates since the second year of the evaluation is presently underway. There are, however, some implications for early admission and the kindergarten program which have emerged at this point.

1. Implement Plan I in Schools Interested in Early Admission to First Grade

The evaluation findings indicated that placing five-year-olds directly in a first grade classroom is a viable approach for meeting the needs of young children who begin school with achievement levels above those of their agemates. In the schools where Plan I was tried, it was positively received by principals, teachers, and parents alike. Almost half of the early admission students in Plan I classrooms were recommended for second grade. There is no reason why any school in the county should not institute such a program if there is an interest in this approach, if there is room in first grade classrooms, and if there is staff support for this concept.

The final component of this recommendation, the staff support, is as important as the particular form of early admission adopted. The decision to implement which, if any, form of early admission should be made by the individual school based on the commitment of the staff and the parents. The experience of implementing the first year of this project suggests that there is little to be gained by requiring a school to implement an early admission program when the school's principal and/or teachers are opposed to the concept. Our preliminary findings suggest that without this support it is likely that even if children are admitted to a program of this type they will

not be promoted from the first to the second grade. A concurrence with the philosophy of early admission and a commitment to the concept on the part of both parents and school staff are crucial if Plan I or any other form of early admission is to succeed.

With regard to selecting students, the study has not yet been able to identify predictors of success which are fully adequate. This may be of little import as the method used to select students for Plan I this year, parent nomination combined with teacher and principal judgment, appeared to work satisfactorily. This process could be further confirmed by examining a child's performance on the Metropolitan Readiness Tests. The evaluation findings showed that if a child scored high on the Readiness Tests, the child would be likely to do well in the program. It would be invalid, however, to use these tests to exclude children who do not score particularly high, since there was a second group of students who were recommended for promotion who did not have high Readiness scores at the time of entry into the program. Considering the reliability problems encountered when testing young children, this finding is not at all surprising.

2. Implement Plan II Where Appropriate

The evaluation findings suggest several conditions are required to implement Plan II classes in a school. One condition is a basic commitment to the program as discussed above. Another condition is the availability of an all-day kindergarten class so that parents who want a full day of education don't place a child in an early admission class solely for that reason and without any intent of allowing the child to be placed in Grade 2 at the end of the year. That kind of parental sentiment was found by the evaluation and is directly counter to the objective of the program. This problem can be avoided by meeting the supplemental needs filled by the early admission program in more appropriate ways (e.g., all-day kindergarten).

The feasibility of the Plan II approach is closely tied to the question of demand within any one elementary school. Entire classrooms only make sense if there is a sufficient number of five-year-olds who are working at, or nearly at, the first grade level at the beginning of the year to warrant an entire class and if there are a sufficient number of parents who would be willing to have their child placed in second grade the following year. The beginning-of-the-year assessment data suggests the former is likely to occur only in schools with several classes at each grade level since overall only a small proportion of five-year-olds in each school were sufficiently advanced. It is only in the schools with the largest kindergarten enrollment that this proportion would be equivalent to more than 20 children. Similarly, sufficient parent interest is most likely in a large school.

3. Consider a Variety of Options for Admitting Children Early to First Grade

Providing first grade experience for a five-year-old wouldn't necessarily need to be restricted to placing a child totally in a first grade room or creating special classes. The objective could be met through some of the options adopted by the Plan I schools in the study, such as a combined K-1 class in which some of the kindergarten children stay all day and others attend for only a half day. Another possibility is having some five-year-olds attend kindergarten as part of a regular class but spend the other half of the day with a first grade class. Some of these options may better provide the

provide the academically advanced five-year-olds with stimulating and interesting activities appropriate to their intellectual level, while at the same time insuring that early admission children are not deprived of activities beneficial to five-year-olds such as creative play, periods of physical activity, or other experiences traditionally associated with kindergarten. If a five-year-old's performance in these kind of arrangements was at a level comparable to that of the first graders, then promotion to Grade 2 could be given serious consideration at the end of the year.

4. Explore the Possibility of Providing Alternatives to the Present Half-Day Kindergarten

The popularity of the program suggests that there is a demand for kindergarten programs which differ from those being offered at the present time. Even teachers and principals who were opposed or reserved about the concept of early admission were anxious to have the program in their school for the 1979-80 school year. Many parents spontaneously commented that they hoped the program would be continued and even expanded.

As noted previously, the basis for the EA program's popularity appeared to rest more in its structure and content then in the opportunity it provided for early admission. Given this, the structure (all-day) or the content (more advanced than a regular kindergarten) can and should be replicated totally independent of the objective of preparing children for Grade 2.

Possible changes include lengthening the five-year-old's school day from half- to full-day, introducing more academic material into the curriculum, enriching the program with a broader offering of experiences, or providing a combination of the above changes. While part of the acceptance of the early admission program was due to the all-day aspect, the nature of the classroom activities was also an important element in its success. Doubling the length of the day without any fundamental changes in the curriculum will not address the concern of parents who feel that their five-year-old is ready for more challenging experiences. Since disaffection with the kindergarten program as it is presently offered was a serendipitous finding of the evaluation, there are no data as to how widespread the feeling is, how dissatisfied parents are, or how many would be interested in any particular kind of change. This area might well be pursued in the near future.

At a minimum, the structure and content of the kindergarten program in Montgomery County needs to be examined carefully to determine the alternatives which would better meet the diverse needs of the county's five-year-olds. For the overwhelming majority of the children in the early admission program, the EA class was not their first school experience. Their parents felt that these children needed something more, or something different, from the half-day kindergarten. They were not, however, particularly interested in placing their five-year-old directly in a first grade classroom; many were even opposed to the idea. For these parents and for an unknown number of other parents in the county, an examination and subsequent broadening of the kindergarten program might represent a more acceptable solution than early admission to first grade.

Additional conclusions and suggestions for future directions for early admission to first grade will be forthcoming as a result of the second-year evaluation. Specifically, the second-year evaluation will provide a more detailed examination of criteria for early admission to first grade, including the use of measures of social development. Additional data will also be available with regard to the reasons why parents chose to put their children in an early admission classroom and what, if any, alternative programs might have been preferred.

# EVALUATION OF THE EARLY ADMISSION TO FIRST GRADE PROGRAM:

# TECHNICAL FINDINGS

MONTGOMERY COUNTY PUBLIC SCHOOLS
Rockville, Maryland
Department of Educational Accountability

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## CHAPTER I - INTRODUCTION

### I. BACKGROUND

On April 27, 1977, the Maryland State Board of Education revised the state bylaw concerning admission to the first grade. The revised bylaw states:

> Every child admitted to the first grade in a public elementary school in a Maryland county be at least 6 years old on or before December 31 of the year in which he applies for entrance. A local board of education may adopt a regulation permitting a 5-year-old child, upon request of the parent, to be admitted to the first grade if the local superintendent or his designee determines that the child has demonstrated capabilities warranting early admission.

In August, 1977, a small committee was appointed by the superintendent of the Montgomery County Public Schools to study the above state bylaw and to make recommendations concerning the feasibility of initiating a program of early admission into first grade. A set of suggested procedures was developed by this committee and presented to the Board of Education in a memorandum in November, 1977. The program plan and associated evaluation suggestions, as revised by the Office of Program Development and the Department of Educational Accountability, were approved in August, 1978. The program was implemented for the first time in the 1978-79 school year. It was continued through the following school year (1979-80) on a reduced scale.

Two approaches to early admission were adopted for the first year of the project. In Plan I, a small number of five-year-olds were allowed, on request of their parents, to enter regular Grade 1 classes. Plan I was implemented in four schools.

Plan II consisted of entire classes of five-year-olds who attended school for the full day. The children in these classes were to progress at their own rate through the kindergarten and first grade curriculum. The expectation was that some children would master first grade material by the end of the year and could be promoted from the early admission class to second grade. Six schools had Plan II classrooms.

This report presents the results of the evaluation of the first year of the Early Admission to First Grade Program. The purposes of the evaluation were to:

A. Compare the academic performance and social behavior of the early admission (EA) students with that of regular first graders

B. Examine the validity of screening measures which could be used to predict success in an early admission program

C. Learn how the program was received by parents, teachers, and principals

The performance of early admission students was compared to that of first graders selected from the same schools. The first grade was selected as the appropriate standard of comparison because the early admission classes were to be treated as first graders for instructional purposes. The achievement of the two groups was compared at two points in time, the beginning and end of the school year. Students in both groups were administered several potentially useful screening instruments at the beginning of the year. Both groups were again assessed at the end of the year to see how their performances compared and to learn how well the screening instruments predicted achievement. One important measure of achievement in the early admission program is promotion to second grade.[1] Other measures were the end-of-the-year assessments.

This report is organized into three chapters. The remainder of this introductory chapter describes the implementation of the project in more detail. The second chapter discusses the methodology of the evaluation, including the demographic characteristics of the students and the instruments used. The detailed findings are presented in the third.

## II. THE MCPS EARLY ADMISSION PROGRAM

### A. School and Student Selection

As mentioned above, the Early Admission Program was implemented in two settings. In Plan I, kindergarten-age children were placed in first grade classrooms which were composed primarily of first-graders. It was planned that these classes would include about three early admission (EA) students each and that the classes would use essentially the regular first grade curriculum, with additional help for the younger students, as needed.

Plan II classrooms provided a special full-day K-1 program for an entire class of five-year-olds. The curriculum was to combine elements of the kindergarten curriculum with the first grade curriculum. The intent of this plan was to cover all of the first grade curriculum by the end of the school year.

Separate selection procedures were used for choosing Plan I and Plan II schools. Prior to the initial planning of the evaluation, commitments had already been made to conduct the Plan I program in five specific schools (which had been selected by the area associate superintendents, in consultation with school principals). These were not changed although one of these schools later dropped out of the program.

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[1]For the sake of brevity, the early admission children promoted to second grade are sometimes referred to as the "promoted students." It should be pointed out that <u>all</u> early admission students were promoted--either to Grade 1 or 2. "Promoted students" is merely an abbreviated form of "students promoted to second grade"; it does not mean that the other students were not promoted.

In selecting the Plan II schools, a deliberate attempt was made to ensure variability in the ability level of students being offered the program. To accomplish this, schools were stratified by median scores on the third grade CAT verbal subtest (from spring, 1978). Schools were categorized by quartile and three lists were developed: schools with medians in the lowest quartile (Quartile 1), those with medians in the second and third quartiles, and those with medians in the top (fourth) quartile. The schools in each list were arranged in a random order and sent to the area associate superintendents who were responsible for final decision regarding school selection.[1] Two schools from each quartile were selected, including one with a large percentage of minority students.

To maximize the variability of the individual students participating in the program and also because, as indicated above, there was little solid prior information on which to base the selection of students, it was decided not to use formal criteria to select students for this program. Selection for program participation was based on parent nomination. A series of meetings was held in the early fall of 1978 to describe the program to interested parents in each of the schools. A general set of criteria was presented for them to use in deciding whether to request their children's placement in the program. These included age (very young children were not recommended), and physical, cognitive, and social/emotional development. Parents could consult with school personnel, but the final decision was left to the parents. In three instances, there were more applicants than available slots in a school. For these schools, the DEA used a random procedure (a table of random numbers) to determine which children were to be excluded.

During this period of meetings and discussions with parents, two of the schools which had initially been selected dropped out, one from Plan I and one from Plan II. The Plan I school dropped out because no parents applied for the program; the Plan II school dropped out as a result of general parental objection to the program in that school.

Ultimately, Plan I was implemented in four schools and Plan II was implemented in six. These schools and the areas in which they are located are shown in Table 1. Of the four Plan I schools two were in the Quartile 2-3 group on CAT verbal scores and two in Quartile 4. The percentage of minority students in these schools ranges between 9 and 13. The final set of Plan II schools included two at Quartile 1, two at Quartiles 2-3, and two at Quartile 4 (the school which dropped out was also at Quartile 4). One of the Plan II schools has a high percentage (57) of minority students; while in the other four, the percentage of minority students ranges between 4 and 16.

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[1]The area associate superintendents were asked to consult with principals to ascertain their interest in and ability to participate in the program, starting from the top of each list and working downward until two schools were selected from each grouping (with the exception that in Quartile 1, priority was to be given to the selection of a school with a high minority enrollment). Selected schools were also to have two or more kindergarten classes so that at least one classroom of regular kindergarteners would remain.

TABLE 1

Schools Which Participated in the Early Admission Program

| School | Area |
|---|---|
| Plan I | |
| Lynnbrook | 1 |
| Seven Locks | 3 |
| Olney | 4 |
| Poolesville | 5 |
| Plan II | |
| Wyngate | 1 |
| Takoma Park | 2 |
| Twinbrook | 3 |
| Cashell | 4 |
| Stedwick | 5 |
| Whetstone | 5 |

There were 18 students enrolled in Plan I and approximately 135 enrolled in Plan II. Additional information about the students in the program is presented later in the report.

B. Implementation

The implementation of Plan I varied slightly from school to school. At Olney and Poolesville, five-year-olds were placed directly in first grade classrooms. At Lynnbrook and Seven Locks, the program was adapted to local needs and variations on Plan I emerged. At Lynnbrook, six EA pupils entered a class made up of kindergarten and normal-aged Grade 1 pupils. The kindergarten pupils attended either the morning or the afternoon session so the class was never without a component of kindergarten pupils. The Grade 1 and EA pupils attended both sessions in a continuous school day.

At Seven Locks, eight EA pupils entered a mixed K-1 class for both morning and afternoon sessions. A small number of normal-aged Grade 1 pupils were in the same class and also participated in both sessions. Kindergarten pupils were scheduled for the morning session, leaving the afternoon to EA and Grade 1 pupils.

In the six Plan II classes, it was intended that instruction would begin with kindergarten experiences and that the first grade program be phased in gradually. Pupils were to be encouraged to progress at their own rates through both the kindergarten and Grade 1 curricula. The Department of Instructional Planning provided assistance to teachers to familiarize them with Grade 1 teaching-learning objectives.

The early admission classrooms were observed at various points during the year by early childhood specialists. The observations conducted in December showed that most of the classes were operating at a kindergarten level. Some first grade activities were being carried out where appropriate. The classrooms appeared to be particularly "first grade" in terms of their organization with children working independently for long periods of time. Children were allowed and encouraged to progress at their own pace.

Observations conducced near the end of the school year showed that most of the EA classes had completed the kindergarten objectives and had moved into first grade materials in mathematics. A variety of reading levels were evident with some children functioning as beginning level first graders and others equaling or surpassing the appropriate level for first graders at the end of the school year. Some of the classroom activities observed were appropriate for five- or six-year olds although they tended to be associated more with kindergarten. Examples of these kinds of activities were free play games, block building, and role-playing in the pretend area.

While some individuals were completing first grade materials, generally the EA classes in the spring seemed to resemble more closely first grade classrooms at the beginning or middle of the school year rather than at the end.

## CHAPTER 2 - METHODOLOGY

As part of the evaluation, the early admission students and a group of first graders from each of the ten schools were tested at the beginning and end of the year. This section presents the demographic characteristics of students who participated in the project and identifies the assessment instruments. The procedures used to learn how parents, teachers, and principals felt about the program are presented later along with those findings.

### I. STUDENT CHARACTERISTICS

A total of 18 early admission students from Plan I and 135 from Plan II were involved in the evaluation. Also included were 181 first graders. The number of children in each of the EA classes and the number of comparison children selected from a first grade in that school are presented in Table 2.

The sex, racial/ethnic group membership, and mean age of the EA and Grade 1 comparison students are shown in Table 3. Data on preschool experience were available only for the EA children. The county enrollment data for September, 1978, are also presented for comparison purposes. The Early Admission classes had a larger proportion of girls than boys enrolled, while the Grade 1 comparison sample had a larger proportion of boys. There were only slightly more boys than girls enrolled countywide.

The data on racial or ethnic group membership indicate the EA and first grade samples approximated the county makeup. There were proportionately more Asian children in the EA sample and proportionately less in the first grade group than in the county. Black children were slightly underrepresented among the early admission students.

The information on preschool experience of the EA students was collected as part of the parent interview. Seventy-eight percent of the EA students were known to have had some type of preschool experience. Assuming the children for whom the information was not available were similar to those for whom it was, 94 percent of the EA children had been enrolled in a preschool.

### II. TESTING

Two potential screening instruments were administered to the students in October, 1978. The two tests were the Developmental Test of Visual-Motor Integration (VMI) and the Metropolitan Readiness Tests. For the results to have the most validity with regard to screening and prediction, the assessments should have been given as early in the year as possible--ideally even before school started. Logistical difficulties associated with the first year of a pilot project prevented earlier testing. It is impossible to estimate the amount of error introduced into the testing by the delay. It is unlikely, however, that it invalidates the results. As long as the less advanced children (as would have been measured by the screening instruments) in August did not become October's accelerated children, the findings are probably valid.

TABLE 2

Number of Children in Early Admission
and Comparison Group by School

| Schools | Early Admission | Grade 1 Comparison |
|---|---|---|
| Plan I | | |
| Olney | 1 | 9 |
| Poolesville | 2 | 25 |
| Seven Locks | 9 | 5 |
| Lynnbrook | 6 | 6 |
| Total | 18 | 45 |
| Plan II | | |
| Cashell | 22 | 21 |
| Stedwick | 21 | 25 |
| Takoma Park | 24 | 22 |
| Twinbrook | 22 | 24 |
| Whetstone | 20 | 19 |
| Wyngate | 26 | 25 |
| Total | 135 | 136 |
| TOTAL | 153 | 181 |

TABLE 3

Demographic Data for Early Admission and Comparison Grade 1 Students

| | Early Admissions | | Comparison Grade 1 | | County Enrollment Grade 1 Sept. 1978 |
|---|---|---|---|---|---|
| | N | % | N | % | % |
| Sample | 153 | 100 | 180[a] | 100 | |
| Sex | | | | | |
| Male | 66 | 43 | 104 | 58 | 53 |
| Female | 87 | 57 | 76 | 42 | 47 |
| Racial/Ethnic Group | | | | | |
| American Indian | 0 | 0 | 2 | 1 | -[b] |
| Asian | 12 | 8 | 5 | 3 | 5 |
| Black | 13 | 8 | 23 | 13 | 12 |
| Hispanic | 4 | 3 | 6 | 3 | 4 |
| White (not Hispanic) | 124 | 81 | 144 | 80 | 79 |
| Preschool Experience | | | | | |
| Yes | 120 | 78 | | | |
| No | 8 | 5 | - | - | - |
| Not available | 25 | 16 | | | |
| Mean Age in September, 1978 (Years, Months) | 5,4 | | 6,3 | | |

[a]Demographic data for one first grade child was missing.

[b]Less than 1 percent.

Achievement at the end of the year was measured by a number of techniques including standardized achievement tests (the Metropolitan Achievement Test) and a teacher-constructed behavior checklist. Other end-of-year measures were a rating scale which was included as part of a teacher questionnaire on promotion and a class ranking. Each of the measures is described in Appendix A.

Table 4 presents a summary of the measures showing when each was administered and which groups were included.

TABLE 4

Summary of Measures

| Measure | Time of Data Collection | Groups Who Received |
|---|---|---|
| Developmental Test of Visual-Motor Integration (VMI) | Beginning of school year | All EA classes |
| Metropolitan Readiness Tests<br>Auditory<br>Visual<br>Language<br>Quantitative | Beginning of school year | All EA classes<br>All Grade 1 Comparisons |
| Early Childhood Checklist<br>Mathematics<br>Language<br>Social Studies<br>Science<br>Work Habits<br>General Social Development | End of school year | Plan II EA classes<br>Plan II Grade 1 Comparisons |
| Metropolitan Achievement Tests<br>Reading<br>Mathematics<br>Language | End of school year | All EA classes<br>All Grade 1 Comparisons |
| Teacher Promotion Questionnaire | End of school year | Teachers completed for every child in EA class |
| Rank Order in Class | End of school year | Teachers rank ordered each Plan II EA classroom |

## CHAPTER 3 - FINDINGS

The first section of this chapter discusses the children promoted or recommended for promotion to Grade 2. The second section presents the comparisons of the various groups in the study at the beginning and end of the year. The third section addresses the issue of the identification of criteria for early admission including the usefulness of the screening instruments in predicting promotion and achievement in the program. Lastly, the results of the parent, teacher, and principal interviews are presented.

### I. PROMOTIONS TO GRADE 2

Of the 153 children enrolled in EA classes, 16 were promoted to second grade for the 1979-80 school. Another 9 students were recommended for promotion by their teachers and principals, but their parents declined this opportunity.[1] The number and proportion of children promoted and recommended for promotion from each school are shown in Table 5.[2]

Overall, 10 percent of the Early Admission students were promoted to Grade 2; 16 percent had been recommended by their schools as candidates for promotion. As can be seen in Table 5, there was a large difference between Plan I and Plan II in the proportion of children recommended for Grade 2. Plan I schools recommended that roughly 40 percent of their EA students be placed in second grade. In contrast, Plan II schools recommended 13 percent of their children. Differences between the two plans were expected because of the procedures employed in selecting EA students in each plan. Plan I schools served a small group with a high likelihood of success. Plan II schools served a broader range of achievement levels and therefore the proportion of children promoted would naturally be lower.

Differences between Plan I and Plan II also appear when the actual promotions are compared to the recommendations. Only one recommendation was declined across the Plan I schools. Across the Plan II schools, nearly as many parents declined the school's recommendation as accepted it. Parent commitment to the prospect of acceleration was demonstrated by Plan I parents in their decision to enroll their five-year-olds directly in a first grade. Parents of Plan II students apparently had more doubts about moving their child ahead which would separate the child from his or her age-mates.

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[1]In general throughout this report, the term "promoted" will be used to describe the children who were actually promoted to Grade 2, i.e., those students whose parents approved of the acceleration. "Recommended for promotion" describes those children the teachers and principals felt could be promoted to second grade. It is the larger group because it includes students whose parents concurred and whose parents disagreed with the recommendation.

[2]These figures represent each child's status with regard to Grade 2 placement as of August, 1979. There was at least one change and probably more after this point as parents reconsidered their approval or disapproval of the recommendation.

TABLE 5

Early Admission Students Recommended for Promotion and Promoted to Grade 2

| | Recommended for Promotion to Grade 2 | | Actually Promoted to Grade 2 | |
|---|---|---|---|---|
| | N | %[a] | N | %[b] |
| Plan I | | | | |
| Olney | 0 | 0 | 0 | 0 |
| Poolesville | 2 | 100 | 2 | 100 |
| Seven Locks | 2 | 22 | 1 | 11 |
| Lynnbrook | 3 | 50 | 3 | 50 |
| Total | 7 | 39 | 6 | 33 |
| Plan II | | | | |
| Cashell | 1 | 5 | 0 | 0 |
| Stedwick | 1 | 5 | 1 | 5 |
| Takoma Park | 3 | 13 | 0 | 0 |
| Twinbrook | 6[c] | 27 | 6[c] | 27 |
| Whetstone | 0 | 0 | 0 | 0 |
| Wyngate | 7 | 27 | 3 | 12 |
| Total | 18 | 13 | 10 | 7 |
| TOTAL | 25 | 16 | 16 | 10 |

[a]Number of EA children recommended for promotion to Grade 2 divided by total number of EA children in group.

[b]Number of EA children promoted to Grade 2 divided by total number of EA children in group.

[c]One other child from Twinbrook was promoted but she joined the class midyear so she was not included in the evaluation.

The demographic data on the children promoted and recommended for promotion to Grade 2 are presented in Table 6. More girls than boys were recommended for promotion and more girls than boys were actually promoted to Grade 2. The data on the racial/ethnic characteristics of the students show that a highly disproportionate number of Asian children were recommended for promotion to Grade 2. Although 8 percent of the entire early admission sample were Asian, 25 percent of the children promoted were Asian. Most of the children who were recommended for Grade 2 had preschool experience, however, so had the great majority of the children in the program. The mean ages of the children who were recommended or promoted approximated the mean age of the entire EA sample. This is particularly interesting because it suggests that there is no basis whatsoever for using month of birth as an entry criterion to the program.

In May, 1979, the teachers of the Early Admission children were asked to complete a Promotion Recommendation Form on each of their students. This was prior to and not necessarily the same as the final recommendation which was made at the end of the year. The teachers were asked several questions about promotion and the parents' attitude toward promotion. Teachers also listed the socioemotional reasons for or against promoting each student to Grade 2.

The promotion questions and the frequency of responses is presented in Table 7. In May, teachers considered 31 children as able to be promoted. However, only 18 of these were seen as capable of second grade work in any school in the county; the remainder were capable of second grade work only in a comparable school or their own school. The teachers knew the parents' feelings on promotion for half the EA students. Most of those parents whose feelings were known were against promotion to Grade 2. However, for over 80 percent of the children, the teacher responded that the parents' feelings did not enter into either their May recommendation or their final recommendation. This indicates the low number of recommendations for promotion to Grade 2 cannot be attributed primarily to teachers' perceptions of parental opposition. Most recommendations for or against represented solely the judgment of the school.

For each child, teachers were asked to give the social and emotional reasons for their recommendation for promotion or nonpromotion. If more than one reason was given, reasons were listed in order from most important to least important. These responses were coded into general categories. The number of times each reason was listed along with its average ranking are presented in Table 8.

Independence, the capability to be adaptive or resourceful, and good peer relations were the most frequently listed reasons for promotion to Grade 2. A number of different reasons were listed for nonpromotion. The most frequent were immature or demanding, poor work habits, easily frustrated, and inattentive. In the second year evaluation, assessments have been included to measure these qualities at the beginning of the school year. If the results are favorable, the positive qualities could be put forth as selection criteria for early admissions while the negative qualities could be reasons to recommend a regular kindergarten program.

TABLE 6

Demographic Data on Children Who Were Promoted to Grade 2

| | Children Recommended for Grade 2 (N=25) | | Children Promoted to Grade 2 (N=16) | | Entire 3A Sample (N=153) |
|---|---|---|---|---|---|
| | N | % | N | % | % |
| **Sex** | | | | | |
| Male | 9 | 36 | 4 | 25 | 43 |
| Female | 16 | 64 | 12 | 75 | 57 |
| **Racial/Ethnic Group** | | | | | |
| Asian | 6 | 24 | 4 | 25 | 8 |
| Black | 0 | 0 | 0 | 0 | 8 |
| Hispanic | 0 | 0 | 0 | 0 | 3 |
| White (not Hispanic) | 19 | 76 | 12 | 75 | 81 |
| **Preschool Experience** | | | | | |
| Yes | 19 | 76 | 11 | 70 | 78 |
| No | 1 | 4 | 1 | 6 | 5 |
| Unknown | 5 | 20 | 4 | 25 | 16 |
| **Mean Age in September, 1978 (years, months)** | 5,5 | | 5,5 | | 5,4 |

TABLE 7

Promotion Recommendation Questions

| | N | % |
|---|---|---|
| **Promotion Recommendation** | | |
| Any second grade in MCPS | 18 | 12 |
| Any second grade in comparable school | 11 | 7 |
| Second grade in present school only | 2 | 1 |
| Do not promote to Grade 2 | 122 | 80 |
| **Parents' Attitude** | | |
| Parents want child to be promoted | 10 | 7 |
| Do <u>not</u> want child to be promoted | 53 | 35 |
| Do not have a position on promotion | 13 | 8 |
| Parents' position not known by teacher | 77 | 50 |
| **Did your knowledge of the child's parents' attitude towards promotion to Grade 2 enter into your recommendation in 1 above?** | | |
| Yes | 23 | 15 |
| No | 130 | 85 |
| **Will your knowledge of the parents' attitude enter into your actual final recommendation?** | | |
| Yes | 28 | 18 |
| No | 125 | 82 |

TABLE 8

Social-Emotional Promotion Factors

| | Number of Times Listed | Mean[1] Ranking |
|---|---|---|
| **Reasons for Promotion** | | |
| Independence | 22 | 2.8 |
| Peer relations | 18 | 2.1 |
| Adaptive/Resourceful | 15 | 2.8 |
| Perseverance | 13 | 3.7 |
| Motivation level | 11 | 2.3 |
| Follows directions | 11 | 2.5 |
| Organization | 9 | 3.1 |
| Cooperative | 6 | 2.3 |
| Accepts rules | 4 | 3.5 |
| Good attention span | 1 | 5.0 |
| **Reasons for Nonpromotion** | | |
| Immature/Demanding | 44 | 2.3 |
| Poor work habits | 36 | 2.0 |
| Easily frustrated | 30 | 2.3 |
| Inattentive | 29 | 2.3 |
| Poor peer relations | 26 | 2.0 |
| Impulsive | 26 | 2.3 |
| Dependent | 24 | 2.6 |
| Doesn't follow directions | 24 | 2.4 |
| Low motivation | 22 | 2.1 |
| Poor coordination | 22 | 2.2 |
| Academic only | 17 | 1.0 |
| Shy | 12 | 2.3 |
| Low perseverance | 11 | 1.7 |
| Low energy | 8 | 2.9 |
| Hostile | 8 | 3.1 |
| Avoids new tasks | 6 | 2.3 |
| Potential learning disability | 1 | 1.0 |

[1]Mean ranking for the number of times the trait was listed as a reason. Most important reason was ranked 1.

## II. COMPARISONS

One of the questions addressed by the evaluation was how do the early admission students compare to regular-aged first graders. Comparisons of the relative performance of the two groups are presented for the beginning of the school year and for the end. Within the early admission group, the comparison of the Plan I and Plan II students provides information about the different achievement levels in the two plans. Two other comparisons within the EA group are presented. The students who were recommended for Grade 2 are compared with those recommended for Grade 1, and those actually promoted to Grade 2 are compared with those actually promoted to Grade 1.

The Grade 1/Grade 2 promotion comparisons within the early admission sample for the beginning-of-the-year measures provide information relevant to the question as to whether the children who will succeed in early admission can be identified at that point in time. If they can be identified by the potential screening instruments, there should be substantial differences between the beginning-of-the-year scores of the children who were promoted to Grade 1 and those promoted to Grade 2.

The comparison of achievement at the end of the year between these two groups answers the question of whether the EA children who will be in Grade 2 differed from those who will be in Grade 1 and, if so, by how much? Also, comparing the achievement level of the EA students who were promoted to Grade 2 with that of the first graders provides some indication of how well the EA graduates will fit in with their new classmates.

The schools who participated in the early admission study represented a number of different achievement levels. Accordingly, it was felt that a different standard for early admission might need to be adopted for each school. The primary consideration was that the EA child's achievement be comparable to that of regular-aged first graders in his or her own school. In this sense, the county average would not be meaningful for screening within an individual school. Given the possible need for school-specific entrance criteria, a required analysis is the comparison of the EA students with their Grade 1 counterparts in each school. These analyses were performed and the results for the Plan II schools are presented in Appendix B. The individual school means for each class on each of the measures are presented there in tabular format. Plan I school means are not presented because there were so few children in each group. The issue of a need for school-specific criteria is discussed in the next section which deals with predicting success in the program.

### A. Beginning-of-the-Year Performance

Developmental Test of Visual-Motor Integration (VMI). The Developmental Test of Visual-Motor Integration (VMI) was administered to all Early Admission classes but not to the first grade classes. A perfect score on the test is 15. Table 9 presents the mean scores on the VMI for the groups of interest.

The mean score on the test for all EA students was 10.2. The Plan I students did not differ significantly from the Plan II students. There were also no differences between the scores of the children promoted to Grade 1 compared to the children promoted to Grade 2.

TABLE 9

Mean VMI Scores

| | Mean |
|---|---|
| Total (N=151) | 10.2 |
| Plan | |
| Plan I (N=17) | 10.9 |
| Plan II (N=134) | 10.1 |
| Recommended for Promotion | |
| To Grade 2 (N=25) | 11.2 |
| To Grade 1 (N=126) | 10.0 |
| Promoted | |
| To Grade 2 (N=16) | 10.5 |
| To Grade 1 (N=135) | 10.2 |

Note: The VMI was administered only to the EA students.

The only significant difference on the VMI was between the group of children recommended for promotion to Grade 2 who had a mean score of 11.2 and those recommended for Grade 1 who had a mean score of 10.0 ($p < .05$).

Figure 1 presents a frequency distribution of the scores on the VMI. The children recommended for and placed in Grade 2 are indicated. As can be seen in the graph, of all those recommended for promotion, the children whose parents declined second grade placements had the higher VMI scores.

Metropolitan Readiness Tests. The Metropolitan Readiness Test was given to both the EA and the first grade classes. The results will be presented for the Total Score (the sum of the four subtests) and for the individual subtests.

The mean on the Total Score was 57.7 for all the EA students as compared to 72.5 for the first graders (Table 10). This difference is highly significant ($p < .0001$). The Plan I EA students were much closer to the first graders in the Plan I schools. The Plan I EA students also scored higher than their Plan II counterparts while the first graders in Plan I schools scored lower than their Plan II counterparts. Only the difference between the first grade groups was statistically significant ($p < .005$).

An examination of the Total Score on the Metropolitan Readiness with regard to the promotion recommendations which were to be made at the end of the year show highly significant differences between the mean scores of the children recommended for Grade 2 and those recommended for Grade 1 (68.7 compared to 55.5, $p < .0001$). However, a comparison of the mean scores of the students actually promoted to Grades 1 or 2 revealed no statistically significant differences although the difference does approach significance. The frequency distribution of scores (Figure 2) of the children recommended for Grade 2 shows why this difference disappears. Just as with the VMI results, the children whose parents declined Grade 2 promotion had the higher total scores on the Metropolitan Readiness of those recommended for Grade 2.

The frequency distribution illustrates several other interesting findings. The students recommended for promotion are at the upper end of the distribution for the EA students and well within the first grade distribution. There is, however, a tremendous amount of overlap between the distribution for the two grade levels. There were also many other EA students who scored equal to or higher than the EA students recommended for Grade 2.

The means on the four subtests of the Metropolitan Readiness Tests are presented in Table 11. On each of the four subtests, the average for the first grade was higher than that for the EA students with the greatest differences found for the Auditory and Quantitative subtests. All EA/first grade differences are significant at $p < .0001$.

The pattern on the subtests is similar to that seen with the Total Scores. On each subtest, the average for the EA children recommended for second grade is higher than that of those recommended for first. Furthermore, the average score of the former group of EA students approached that of the comparison first graders. This indicates that in general this group of EA children was performing almost as high as beginning first graders when they started school. Also, for each of the tests, the effect of removing the children whose parents declined promotion to second grade (Recommended for

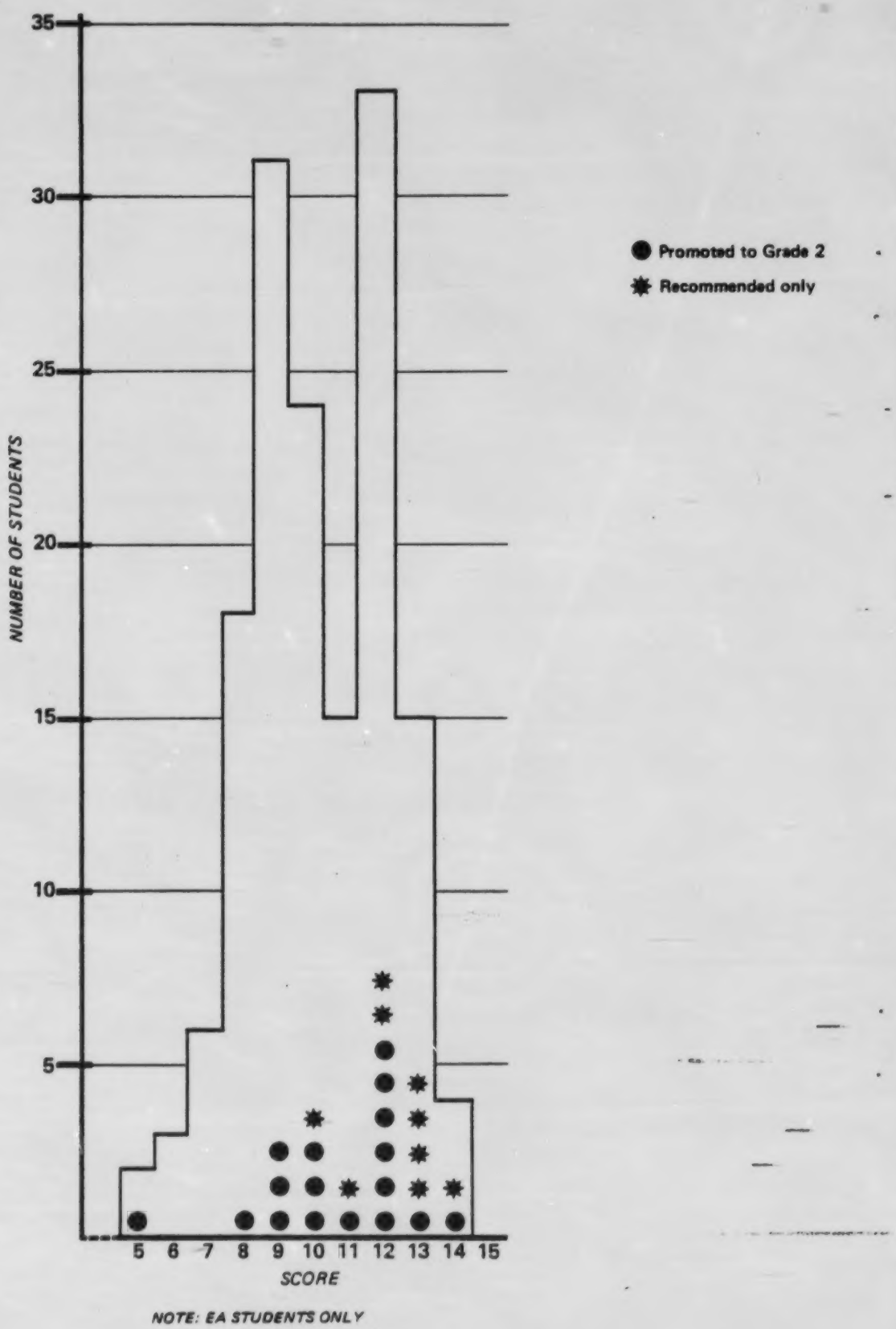


Figure 1: FREQUENCY DISTRIBUTION OF VMI SCORES

TABLE 10

Mean Scores on Metropolitan Readiness Test (Total)

| | Early Admission | Grade 1 Comparison |
|---|---|---|
| Total | 57.7 (N=150) | 72.5 (N=177) |
| Plan | | |
| Plan I | 62.5 (N=17) | 66.7 (N=44) |
| Plan II | 57.1 (N=133) | 74.4 (N=133) |
| Recommended for Promotion | | |
| To Grade 2 | 68.7 (N=25) | - |
| To Grade 1 | 55.5 (N=125) | - |
| Promoted | | |
| To Grade 2 | 64.1 (N=16) | - |
| To Grade 1 | 56.9 (N=134) | - |

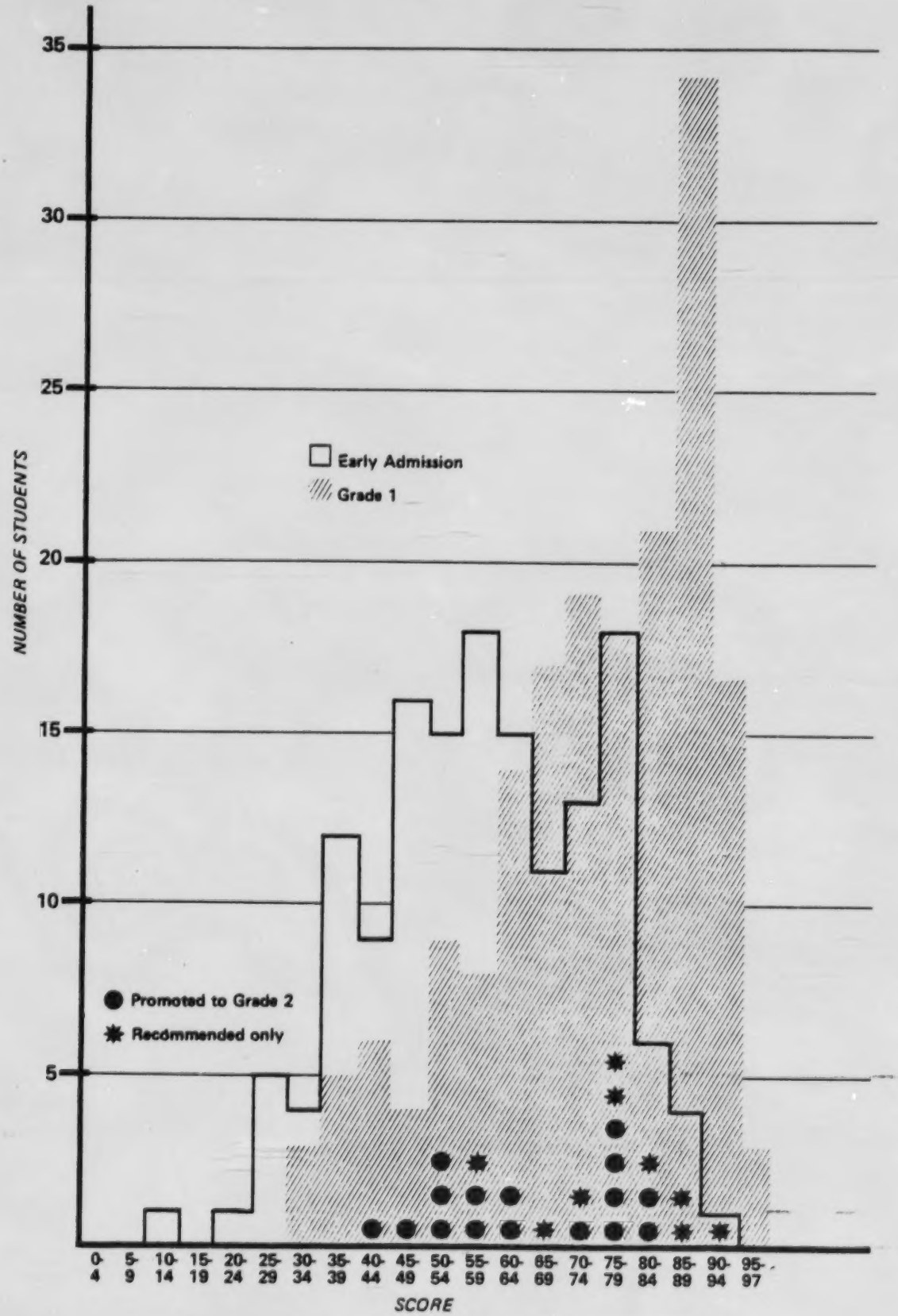


Figure 2: FREQUENCY DISTRIBUTION ON METROPOLITAN READINESS TOTAL SCORE BY GRADE

TABLE 11

Mean Scores on the Metropolitan Readiness Subtests

| | Early Admission | Grade 1 Comparison |
|---|---|---|
| AUDITORY | | |
| Total | 18.3 (N=151) | 23.1 (N=180) |
| Plan | | |
| Plan I | 21.2 (N=17) | 20.4 (N=45) |
| Plan II | 17.9 (N=134) | 24.1 (N=135) |
| Recommended for Promotion | | |
| To Grade 2 | 23.0 (N=25) | - |
| To Grade 1 | 17.4 (N=126) | - |
| Promoted | | |
| To Grade 2 | 22.0 (N=16) | - |
| To Grade 1 | 17.9 (N=135) | - |
| VISUAL | | |
| Total | 14.1 (N=153) | 18.9 (N=180) |
| Plan | | |
| Plan I | 15.5 (N=17) | 17.5 (N=45) |
| Plan II | 14.0 (N=134) | 19.4 (N=135) |
| Recommended for Promotion | | |
| To Grade 2 | 17.1 (N=25) | - |
| To Grade 1 | 13.6 (N=126) | - |
| Promoted | | |
| To Grade 2 | 15.6 (N=16) | - |
| To Grade 1 | 14.0 (N=135) | - |

| | | |
|---|---|---|
| LANGUAGE | | |
| Total | 11.8 (N=151) | 13.8 (N=180) |
| Plan | | |
| Plan I | 11.9 (N=17) | 13.0 (N=44) |
| Plan II | 11.7 (N=134) | 14.0 (N=136) |
| Recommended for Promotion | | |
| To Grade 2 | 12.6 (N=25) | - |
| To Grade 1 | 11.6 (N=126) | - |
| Promoted | | |
| To Grade 2 | 11.8 (N=16) | - |
| To Grade 1 | 11.8 (N=135) | - |
| QUANTITATIVE | | |
| Total | 13.4 (N=150) | 17.3 (N=177) |
| Plan | | |
| Plan I | 13.8 (N=17) | 16.0 (N=44) |
| Plan II | 13.4 (N=133) | 17.7 (N=133) |
| Recommended for Promotion | | |
| To Grade 2 | 16.2 (N=25) | - |
| To Grade 1 | 12.9 (N=125) | - |
| Promoted | | |
| To Grade 2 | 14.7 (N=16) | - |
| To Grade 1 | 13.3 (N=134) | - |

Grade 2 versus Promoted to Grade 2) was to lower the mean of the group. The means for the students recommended for Grade 2 and recommended for Grade 1 were significantly different on the Auditory, Visual, and Quantitative subtests. The means for the actual promotions were significantly different only on the Auditory subtest. Overall, the scores on the Language test showed the fewest differences of any of the comparisons.

The distributions of scores on the subtests (Figure 3) show the same features as the Total Score distribution. The EA students recommended for promotion to Grade 2 were at the upper end of the distribution although many other EA students received similarly high scores and were not recommended for Grade 2. All four distributions show a great deal of overlap between the EA students and the comparison first graders. Additional implications for using the test results as entry criteria will be presented later in the report as part of the discussion on predicting success in the program.

B. End-of-the-Year Performance

This section will present the mean scores for the groups on three measures: the Teacher Rating, the Early Childhood Checklist, and the Metropolitan Achievement Test. Teacher Ratings were collected only for the early admission students; data on the other two measures were collected for both the EA students and the comparison first graders. All data were collected in May.

Teacher Ratings. Teachers were asked to rate each child's grade level performance in four areas: reading, arithmatic, general academic skills, and social-emotional behavior. The average ratings for the four areas are presented in Table 12. A rating of 3 on the scale is midyear Grade 1. The meanings for all points on the scale are in Appendix A.

The means for all the EA students combined are near the midyear first grade level for reading, arithmetic, and general academic skills. Social-emotional behavior was rated slightly lower with the EA students seen as closer to beginning year first graders in this area. The difference between social-emotional behavior and the other areas was highly significant; for instance, the comparison of social-emotional to general academic skills was significant at $p < .0001$. The Plan I students were higher than the Plan II students with the same pattern in both groups of a slightly lower social rating.

The average ratings for the students recommended for or promoted to first and second grades show strong differences. The average rating in all areas for those recommended for second grade was 4 (end year Grade 1) or higher which is exactly where students promoted to Grade 2 would be expected to be. The ratings for the children recommended for first grade ranged from 2.0 for social-emotional behavior to 2.8 for arithmetic. (All differences were highly significant, $p < .0001$.)

The distribution of ratings in each of the four areas is presented in Figure 4. The distributions illustrate that the students recommended and actually promoted to Grade 2 were rated among the highest of the EA students although a few children in this group did receive some rather low ratings. By and large, the children who were given the highest ratings, especially in the Reading and General Academic areas, were recommended for promotion.

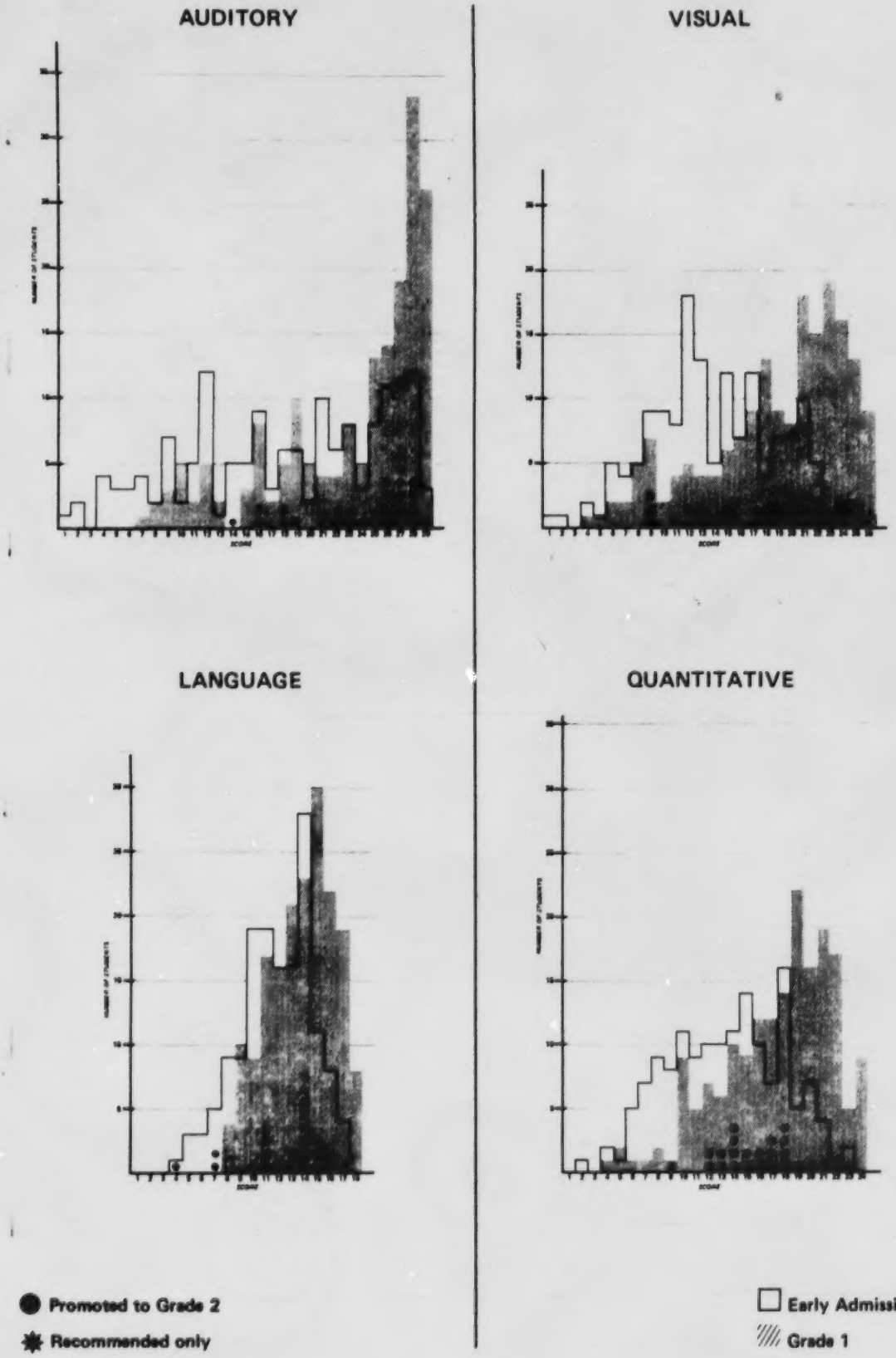


**Figure 3: FREQUENCY DISTRIBUTIONS OF SUBTEST SCORES ON THE METROPOLITAN READINESS TEST**

TABLE 12

Mean Teacher Ratings

| | | Reading | Arithmetic | General Academic Skills | Social-Emotional Behavior |
|---|---|---|---|---|---|
| Total | (N=153) | 2.9 | 3.0 | 2.8 | 2.4 |
| Plan | | | | | |
| Plan I | (N=18) | 3.7 | 3.4 | 3.5 | 2.8 |
| Plan II | (N=135) | 2.8 | 3.0 | 2.7 | 2.3 |
| Recommended for Promotion | | | | | |
| To Grade 2 | (N=25) | 4.8 | 4.4 | 4.7 | 4.2 |
| To Grade 1 | (N=126) | 2.6 | 2.8 | 2.4 | 2.0 |
| Promoted | | | | | |
| To Grade 2 | (N=16) | 4.8 | 4.4 | 4.6 | 4.0 |
| To Grade 1 | (N=137) | 2.7 | 2.9 | 2.6 | 2.2 |

NOTE: Data available only for EA children.
A rating of 3 is mid-year Grade 1.

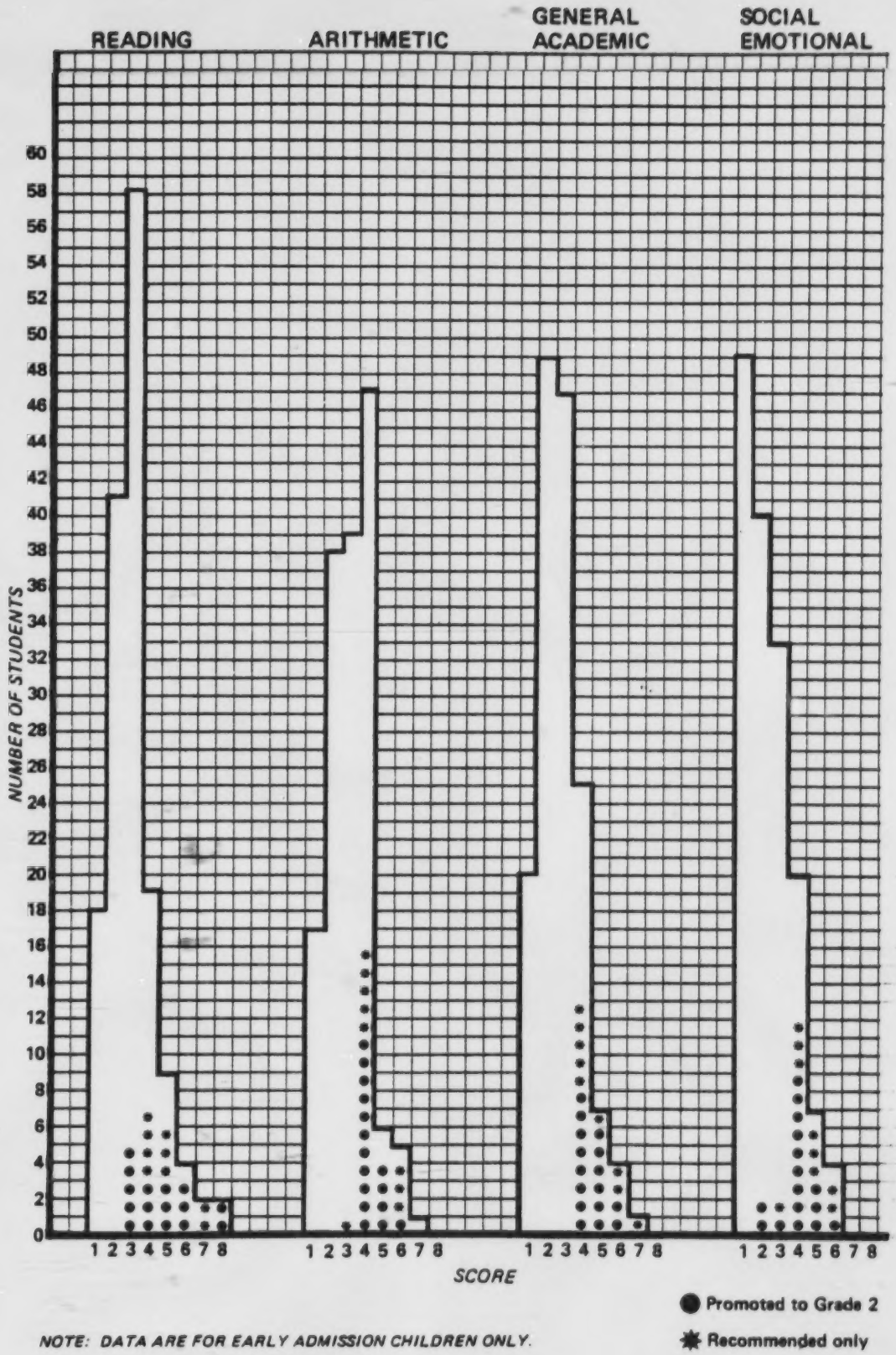


**Figure 4: FREQUENCY DISTRIBUTION OF TEACHER RATING OF ACHIEVEMENT IN READING, ARITHMETIC, GENERAL ACADEMIC, AND SOCIAL EMOTIONAL BEHAVIOR**

Metropolitan Achievement Test. Three subtests of the Metropolitan Achievement Test were administered. The scores on the three subtests, Reading, Language, and Mathematics, were summed to produce a Total Score. The Totals will be presented first followed by the subtest results.

The mean score for all early admission students was 70.6 as compared to the first grade mean of 88.2 ($p < .0001$). These data along with the other comparisons are presented in Table 13. Within the EA group, the Plan I students scored higher than the Plan II students; the pattern was exactly the opposite for the first grade counterparts of these two groups. Accordingly, the Plan I EA students' average score was similar to the Plan I comparison group. The Plan II EA students, however, were significantly below their Plan II first grade comparison ($p < .0001$).

A 35-point difference was found between the mean scores of the EA children recommended for second grade and those recommended for first. The EA students recommended for second grade were far advanced over their classmates at the end of the year. Furthermore, that average score of 101.3 for the EA students recommended for second grade exceeded the first grade average ($p < .02$). This strongly indicates the accelerated students would not be at any academic disadvantage when placed in second grade classrooms. Their average achievement was higher than the average for the children who would be their classmates. The average for the EA children actually promoted was 94.3 which was slightly lower but still higher than the other EA children and comparable to the first grade mean.

The frequency distribution of Total Scores (Figure 5) shows the high relative achievement of the individual EA students recommended for second grade placement. Their scores were high for their own age-mates and also high for the first grade group. Interestingly enough, the pattern found with the beginning of the year scores was substantiated: the children whose parents were eventually to decline acceleration were some of the highest of the students recommended. Fourteen of the children recommended for Grade 2 scored 105 or above; eight of the nine children whose parents declined promotion were in this group. Seven children scored 120 or above. All were recommended for second grade; four of their parents declined.

The students who were actually promoted to Grade 2 had a range of scores from 60 to 125 but all were well within the first grade range of 35 to 130 as were most of the EA students. Approximately one-fourth of the EA students scored at or above the first grade mean of 88. The frequency distribution clearly indicates that both the EA and the first grade classes included a wide range of ability levels.

The mean scores on the subtests of the Metropolitan Achievement Tests are presented in Table 14. The individual subtests follow the pattern of the Total Score with the first graders superior on the average to the early admission children. The EA children recommended for promotion to Grade 2 had a numerically higher mean score than the mean for the first grade comparison group in each subtest area. This difference was statistically significant for the Reading and Language Test ($p < .07$ and $p < .025$, respectively). The difference is particularly large on the Reading subtest where the EA children recommended for Grade 2 averaged almost 10 points higher than the first graders.

TABLE 13

Mean Scores on the Metropolitan
Achievement Test - Total Score

| Schools | Early Admission | Grade 1 Comparison |
|---|---|---|
| Total | 70.6 (N=147) | 88.2 (N=175) |
| Plan | | |
| Plan I | 78.2 (N=18) | 80.6 (N=41) |
| Plan II | 69.6 (N=129) | 90.6 (N=134) |
| Recommended for Promotion | | |
| To Grade 2 | 101.3 (N=24) | - |
| To Grade 1 | 64.6 (N=123) | - |
| Promoted | | |
| To Grade 2 | 94.3 (N=15) | - |
| To Grade 1 | 67.9 (N=132) | - |

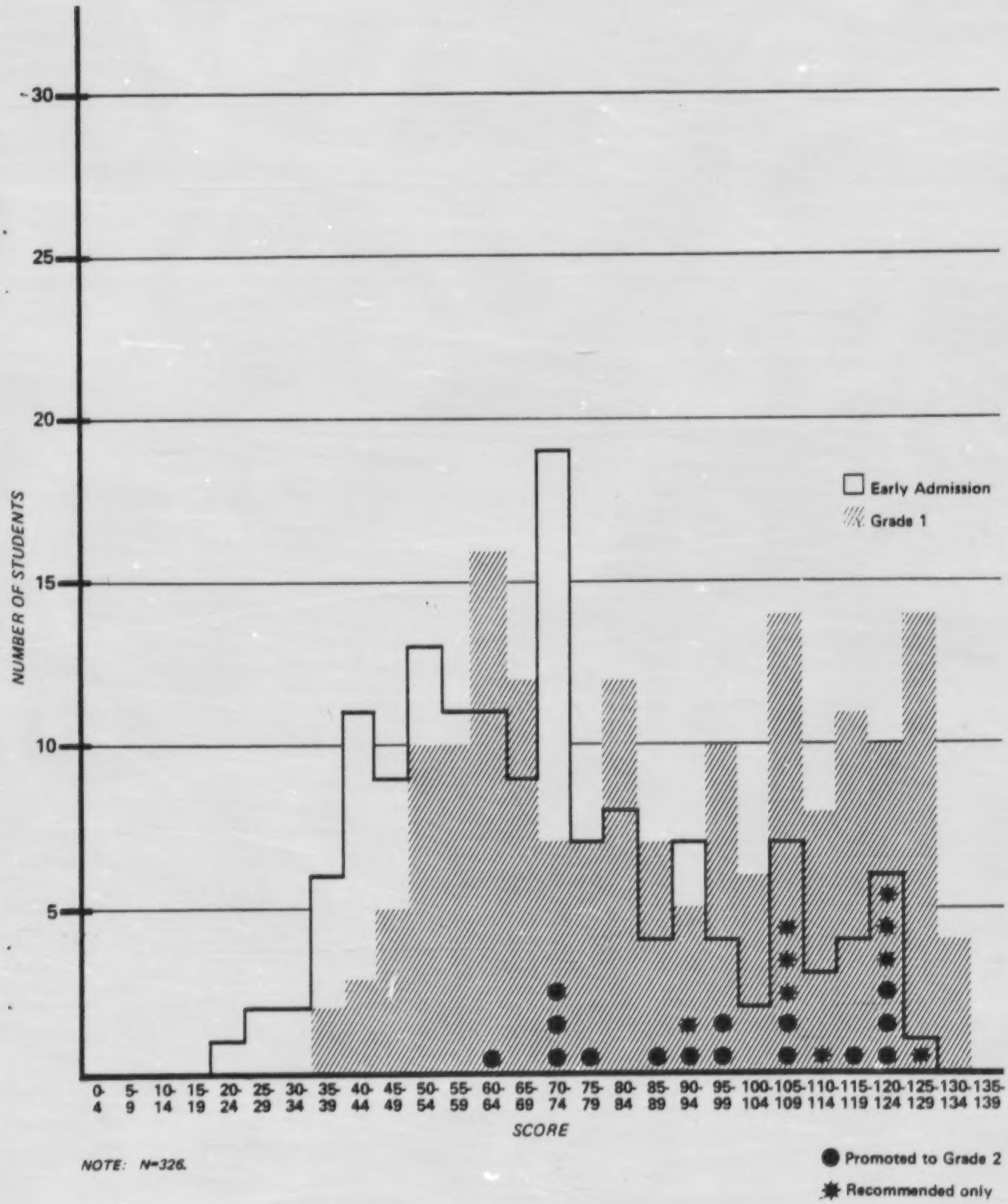


Figure 5: FREQUENCY DISTRIBUTIONS OF METROPOLITAN ACHIEVEMENT SCORES (Total)

TABLE 14

Mean Scores on the Metropolitan
Achievement Test - Subtests

| | Early Admission | Grade 1 Comparison |
|---|---|---|
| READING | | |
| Total | 26.0 (N=149) | 34.8 (N=177) |
| Plan | | |
| Plan I | 30.2 (N=18) | 30.5 (N=41) |
| Plan II | 25.4 (N=131) | 36.0 (N=136) |
| Recommended for Promotion | | |
| To Grade 2 | 43.4 (N=24) | - |
| To Grade 1 | 22.7 (N=125) | - |
| Promoted | | |
| To Grade 2 | 38.9 (N=15) | - |
| To Grade 1 | 24.6 (N=134) | - |
| MATHEMATICS | | |
| Total | 19.8 (N=151) | 24.8 (N=179) |
| Plan | | |
| Plan I | 21.9 (N=18) | 23.5 (N=43) |
| Plan II | 19.5 (N=133) | 25.2 (N=136) |
| Recommended for Promotion | | |
| To Grade 2 | 26.4 (N=24) | - |
| To Grade 1 | 18.6 (N=127) | - |
| Promoted | | |
| To Grade 2 | 25.4 (N=15) | - |
| To Grade 1 | 19.2 (N=136) | - |

TABLE 14 cont.

| | Early Admission | Grade 1 Comparison |
|---|---|---|
| LANGUAGE | | |
| Total | 24.6 (N=149) | 28.2 (N=177) |
| Plan | | |
| Plan I | 26.1 (N=18) | 26.7 (N=43) |
| Plan II | 24.4 (N=131) | 28.6 (N=134) |
| Recommended for Promotion | | |
| To Grade 2 | 31.5 (N=24) | - |
| To Grade 1 | 23.3 (N=125) | - |
| Promoted | | |
| To Grade 2 | 30.0 (N=15) | - |
| To Grade 1 | 24.0 (N=134) | - |

The frequency distributions for the three subtests are shown in Figure 6. While the mean scores of the EA children and the comparison first graders are different, the frequency distributions reveal that many EA students are within the first grade range. For the Reading subtest in particular, there was a substantial dispersion of scores. Many of the EA children who were recommended for promotion to Grade 2 were at the top of their group and the top of the first grade group as well. On each test, however, a few of the EA children promoted to second grade scored below the first grade mean. There were also many EA children who were not recommended for Grade 2 who scored higher than those who were.

Early Childhood Checklist. The Early Childhood Checklist consisted of several academic areas and two social emotional indices. The General Academic and the Social Emotional were summed to give a Grand Total. Only the results for the General Academic Total, the Social Total, and the Grand Total will be presented. The individual subtest scores reflected the same trends. The Early Childhood Checklist was not completed for the Plan I children or their comparison first graders, so the data describe only the Plan II children.

The comparisons among the groups of interest reveal the same findings seen with the Metropolitan Achievement Tests (see Table 15). The first graders were rated higher than the EA children in both the social and academic areas. The early admission average on the academic sections was 30.5 compared to a first grade average of 39.3 ($p < .0001$). For the social items, the early admission students were given a mean rating of 9.2 compared to a 11.2 for the first graders ($p < .0001$). There were no statistically significant differences between the EA students recommended for promotion and the first graders.

The Early Childhood Checklist results unlike those from the Metropolitan Achievement Tests did not show the EA children whose parents declined second grade as the highest of those recommended for promotion. This can be seen in Figure 7, which shows the score distributions.

The distributions also show that most of the first graders and some of the EA students had mastered the entire set of skills assessed by the checklist. The checklist needs to be geared to a higher level of difficulty to tap more fully all the skills these students possessed. Given the skewed nature of the distribution, it is safe to assume that the students at the upper end were capable of quite a bit more than the checklist assessed. Nevertheless, the checkist provides additional evidence that the EA children promoted to second grade are likely to resemble their second grade peers academically as well as socially in that their scores were comparable to the first grade comparison group.

Class Rank. Teachers were asked to rank order their classes from most able to least able to be promoted to Grade 2. Class rankings were obtained for the EA Plan II students. Not surprisingly, the students promoted to second grade (N=10) were ranked near the top of their classes. Their ranks ranged from 1 to 9 with a mean rank of 4.0. The rank for the children recommended for second grade (N=18) ranged from 1 to 9 with a mean rank of 3.8. Five of the children recommended were ranked as highest in their class.

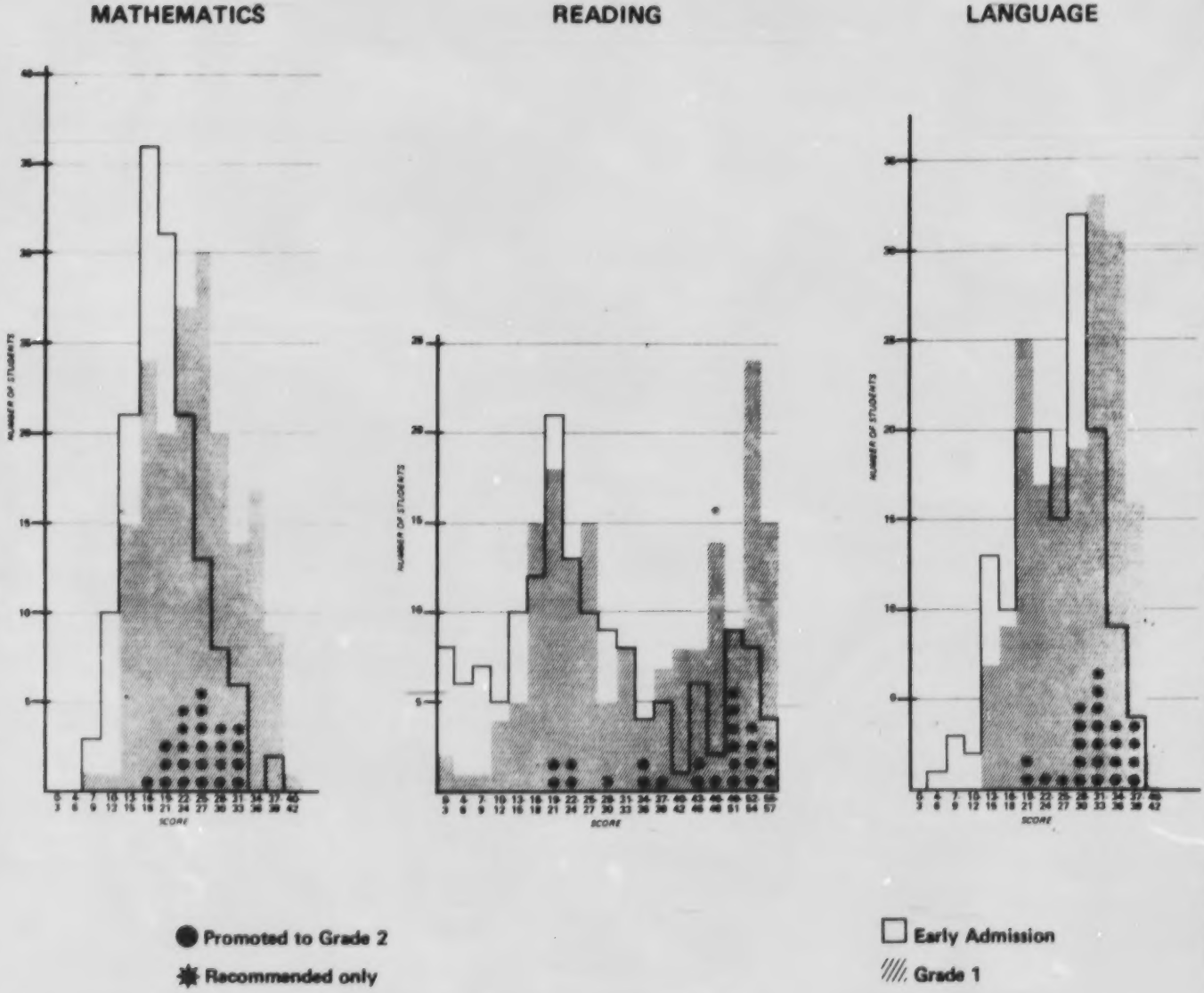


Figure 6: FREQUENCY DISTRIBUTIONS FOR SUBTESTS OF THE METROPOLITAN ACHIEVEMENT TEST

TABLE 15

Mean Scores on the Early Childhood Checklist

| Grand Total | Early Admission | Grade 1 Comparison |
|---|---|---|
| Total | 40.0 (N=134) | 50.4 (N=136) |
| Recommended for Promotion | | |
| To Grade 2 | 54.1 (N=18) | - |
| To Grade 1 | 37.4 (N=116) | - |
| Promoted | | |
| To Grade 2 | 54.7 (N=10) | - |
| To Grade 1 | 38.4 (N=124) | - |
| ACADEMIC TOTAL | | |
| Total | 30.5 (N=134) | 39.3 (N=136) |
| Recommended for Promotion | | |
| To Grade 2 | 42.4 (N=18) | - |
| To Grade 1 | 28.6 (N=116) | - |
| Promoted | | |
| To Grade 2 | 43.0 (N=10) | - |
| To Grade 1 | 29.5 (N=124) | - |
| SOCIAL TOTAL | | |
| Total | 9.2 (N=133) | 11.2 (N=134) |
| Recommended for Promotion | | |
| To Grade 2 | 11.6 (N=18) | - |
| To Grade 1 | 8.9 (N=115) | - |
| Promoted | | |
| To Grade 2 | 11.7 (N=10) | - |
| To Grade 1 | 9.0 (N=123) | - |

NOTE: Data available only for Plan II EA students and their comparisons.

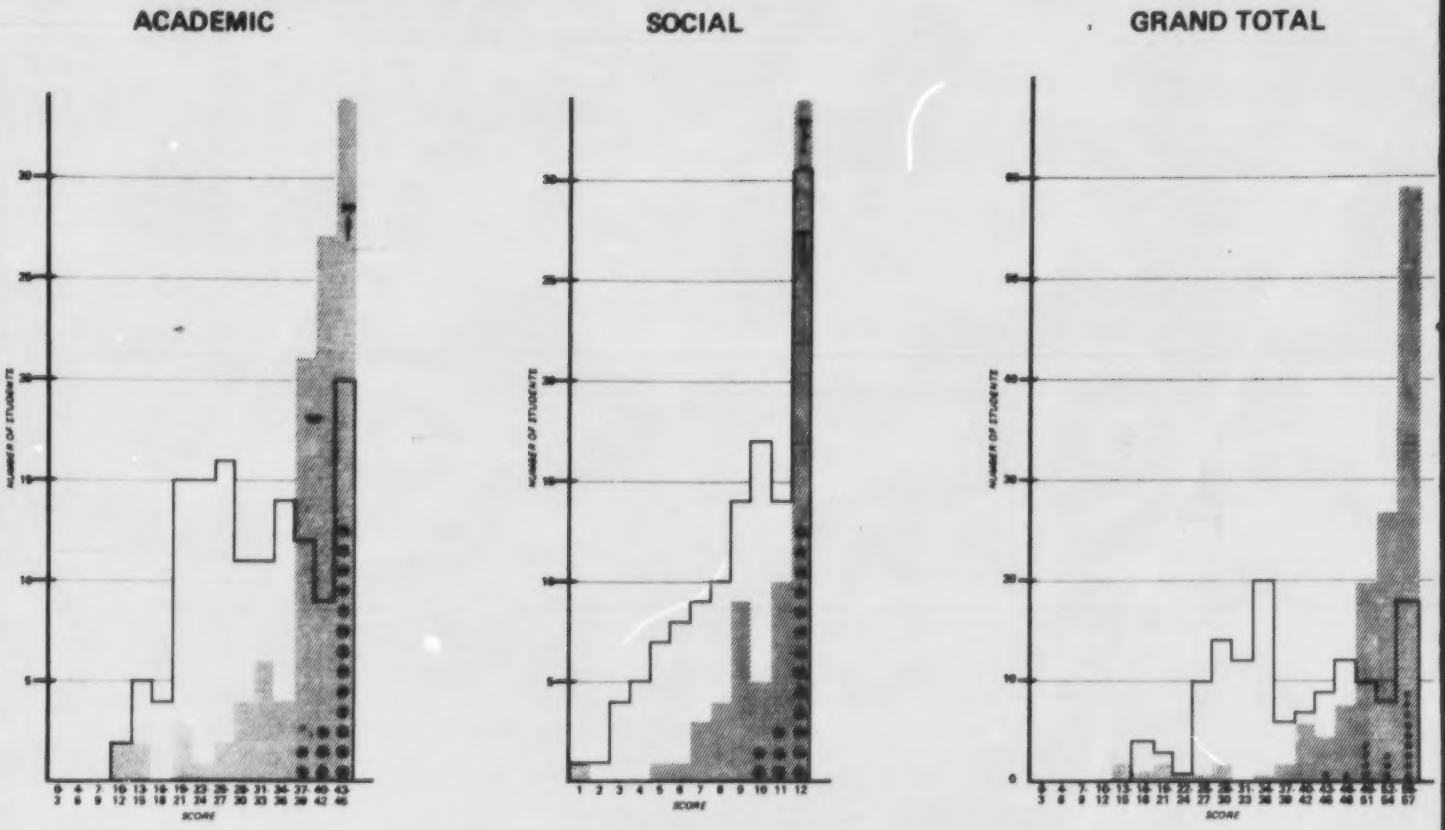


Figure 7: FREQUENCY DISTRIBUTIONS ON EARLY CHILDHOOD CHECKLIST

C. Summary and Discussion of the Comparison Analyses

Comparisons among the groups of interest, the early admission children (Plan I and Plan II), the early admission children who were promoted to Grade 2, those recommended for promotion, and the comparison first graders point to several conclusions. These findings are strengthened by the fact that they hold across the different types of measures used in the study.

1. The Plan I early admission children had higher achievement levels than the Plan II early admission children at the beginning and end of the year.

   The Plan II classrooms served children with a broader range of achievement levels. It is not surprising to find that by the end of the year the entire group of Plan II students was not equal to the select group of Plan I students. This finding does show that Plan I, i.e., direct entrance to some form of first grade, did not hinder the achievement of these students, for instance, by lowering their motivation in light of the more the difficult material or more advanced classmates. The Plan I children were exceptional in September, and they were still exceptional in May.

2. The first grade comparison classes had higher average achievement levels than the Plan II early admission classes at the beginning of the year and the end of the year.

   This finding also was not surprising. There was no expectation that the entire early admission class would be ready for second grade work. The only criterion for entrance to Plan II was parent nomination, and thus these classes included many different achievement levels. It does not reflect negatively on the Plan II classrooms to learn that at the end of only one year of school, many children were not equal to the first grade children who had had two years.

3. The early admission students who were to be recommended for second grade scored higher on the beginning of the year assessments than the EA children who were to be recommended for first grade. The beginning-of-the-year differences were slight compared to the end-of-the-year differences which were very substantial.

   The existence of differences at the beginning of the year between children who would be recommended for Grade 2 and those who would be recommended for Grade 1 sounds a hopeful note for the possiblility of predicting success before the child enters a program. The differences, however, were not great. The very sizeable differences between the groups at the end of the year suggest that some children made large and rapid gains, while others were progressing at a much slower pace. The children seem to have found their own niche over the course of the year, making the outstanding children much easier to identify at the end of the year than they were at the beginning.

4. The early admission children who were promoted/recommended for promotion to second grade had an end-of-year achievement level equal to or higher than that of the average first grader.

Not only did the children promoted or recommended for Grade 2 promotion surpass their classmates in achievement by the end of the year, as a group they also equaled or surpassed the first graders. This suggests that the EA graduates who will be in second grade are at a minimum academically ready for that curriculum. There were a few exceptions to this pattern for individual children on different measures but even in these cases, the promoted EA children fell within the first grade range.

5. Of those early admission students who were recommended for promotion to Grade 2, the children whose parents declined the opportunity were generally the highest achievers of the group.

   This was true at the beginning of the year and was true at the end of the year when achievement was measured by the Metropolitan Achievement Test. Considering the small number of children involved, the fact that the parents of "the best of the best" declined promotion might be totally coincidental. It is difficult to even speculate on an underlying reason for this phenomenon if it is real.

6. The degree of overlap in the achievement level of the early admission and first grade students varied depending on the measure employed.

   The distributions for the standardized tests showed much overlap. These results indicated that the only difference between a sizeable number of first graders and a similar number of early admission students was their grade level. While it was true that the group means were different, the individuals who made up both groups ran the gamut from very high to very low with the midrange being occupied by students from both grade levels. If the test results can be accepted as valid, this finding suggests that many kindergarten children are ready for the first grade material and/or, vice versa, many first graders are not.

   The results of the Early Childhood Checklist which were made up of what the teachers saw as appropriate first grade objectives tempers this conclusion somewhat. The findings showed that many of the first graders had mastered these objectives as had only a minority of the early admission students. Many more of the early admission students and some of the first graders still had much room for improvement.

## III. IDENTIFICATION OF CRITERIA FOR EARLY ADMISSION

The problem of identifying entry criteria for early admission is addressed in three ways. First, the degree of association between the beginning-year measures of performance and end-of-year measures are presented. The second approach sets up hypothetical cutoff scores and examines who would have been admitted to the program based on their performance on the potential screening instrument and how these children did at the end of the year. The issue of the need for different standards for different schools is discussed as part of this approach. The third approach involves a statistical technique which mathematically combines several test scores to determine if an early admission student was more like his or her own classmates or more like the first grade group.

A. Correlations with Achievement

One measure of predictive capability of the screening measures is the degree of association or correlation between how children scored at the beginning of the year and their achievement levels at the end of the year. If the children who did well or poorly on the screening measures are the same children who were performing well or poorly respectively at the end of the year, the degree of association will be large.

Five measures of success in the program are used in the analysis:

- o Recommendation for Promotion to Second Grade
- o Metropolitan Achievement Scores
- o Early Childhood Checklist Scores
- o Teacher Rating of Achievement Level
- o Class Rank

The recommendation for second grade promotion was used as a criterion measure rather than actual promotion since the recommendation is a more accurate reflector of the child's achievement. All measures are examined in relation to the screening measures and in relation to each other to see to what extent alternative measures of achievement relate to each other.

1. Recommendation for Promotion

Pearson product moment correlations between recommendation for second grade and the predictor measures are presented in Table 16. Separate correlations are presented for the Plan I, Plan II, and the total EA group. Correlations with the other achievement measures are also presented. Kendall's tau was used to compute the association between promotion recommendation and class ranking.

The correlations between the scores on the potential screening measures and the recommendation for promotion are consistently low. While the correlations for the total EA group are all statistically significant, the strength of the association is so low as to be nonexistent for practical purposes. The highest correlations are for the Total Score, the Auditory subtest and the Quantitative subtest with respective r's of .30, .28, and .27. The proportion of variance in recommendations for second grade promotion explained by the Metropolitan Readiness Total Score was a meager 9 percent ($r^2$).[1]

The relationship between promotion and the other end-of-year measures of achievement varies from measure to measure. The lowest correlation is .33 for the Social Total on the Checklist. This finding is difficult to reconcile with the .62 correlation between the teacher rating of Social Development and the promotion recommendation which was one of the highest correlations. The rating was completed as part of a Promotion Recommendation Form which possibly led teachers to make their social ratings consistent with their promotion recommendations and resulted in a high correlation.

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[1]Correlations with actual promotion were also examined and found to be even lower. The highest correlation was found between performance on the Auditory subtest and actual promotion (r=.17).

TABLE 16

Correlations With Recommendation for Promotion to Second Grade

| Variable | Total EA Group (N=153) | Plan I Only (N=18) | Plan II Only (N=135) |
|---|---|---|---|
| Beginning-of-the-Year Measures | | | |
| VMI | .21 | .18 | .19 |
| Met. Readiness--Auditory | .28 | .31 | .25 |
| Visual | .26 | .28 | .23 |
| Language | .14 | .21 | .13 |
| Quantitative | .27 | .23 | .28 |
| Total Score | .30 | .34 | .28 |
| End-of-the-Year Measures | | | |
| Met. Achievement--Reading | .51 | .70 | .46 |
| Mathematics | .48 | .42 | .49 |
| Language | .43 | .41 | .43 |
| Total Score | .55 | .62 | .53 |
| Checklist--Academic[a] | .52 | - | .52 |
| Social[a] | .33 | - | .33 |
| Total[a] | .52 | - | .52 |
| Teacher Rating--Reading | .62 | .67 | .58 |
| Arithmetic | .50 | .75 | .42 |
| General Academic | .71 | .78 | .67 |
| Social Emotional | .62 | .73 | .59 |
| Class Ranking[a] | .42 | - | .42 |

[a]Plan II students only.

The highest correlation was with the Teacher Rating of General Academic Ability. The magnitude of this correlation (and the others from the Teacher Rating Scale) can probably be explained by the reason just presented above. Also, promotion and the ratings are similar in that both are gross level reflections of the child's achievement level as perceived by the teacher. Class ranking which had a low correlation is also this type of a measure but for class ranking, some children had to be ranked near the top even if the teacher thought no one was ready for second grade. This would lead to a lower degree of association overall.

The low correlations between the recommendation for second grade and the screening measures and between the recommendation and the other achievement measures indicate that other factors are entering into the decision to recommend for Grade 2. One factor could be the attitude of the teachers and principals toward promotion to second grade and just how exceptional children had to be before they would be recommend for the second grade. Another factor could be the differing levels of achievement in different schools. Children who are excelling in one school compared to their classmates might be only average when compared to the children in another school. When all the tests scores were combined across schools, it would look like children from a range of achievement levels were recommended for promotion to second grade--which in fact was the case. The problem of different standards is discussed in more depth the following sections.

The correlations between the predictor measures and promotion and between promotion and the other achievement measures were computed separately for Plans I and II. These data were presented in Table 16 along with the correlations for the entire EA group. For the most part, the correlations by Plan are less than those for the entire group. Many of the patterns between variables remained the same. These data indicate that the relationship between promotion and the other measures did not differ across the plans.

There are several other criteria which could not be legitimately used to screen children for early admission but which might be associated with success in the program. Sex and race are two such factors for which data were available in this study. Age and preschool experience are other factors which have been suggested as possible screening variables.

Of these four factors, the only one which was related to promotion in any way was race/ethnicity. (Eta=.30, with recommended promotion as the dependent variable.) This relationship is a reflection of the disproportionate number of Asian children who were recommended for second grade. Although more girls than boys were so recommended, this relationship was not statistically significant. Of those EA children for whom the information was available, approximately 94 percent of them had preschool experience.[1] There was not enough variance along this dimension to make preschool experience a useful predictor of success in the program. As discussed earlier, there was no evidence to suggest that month of birth was related to achievement in the program.

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[1]Preschool information was only available on 128 of the 153 EA children.

Interestingly enough, one of the most useful pieces of information to know about a child in trying to predict a promotion recommendation was the name of the child's school. Knowing the child's school accounted for 18 percent of the variance as compared to knowing the child's race which accounted for only 9 percent (eta-squared). This is a reflection of the large variation in the number of children different schools recommended for promotion to second grade.

2. Other Measures of Achievement

Correlations between the predictor measures and the other measures of achievement show a pattern similar to the findings with the promotion criterion variable although the magnitude of the correlations is markedly higher (see Table 17).

Examining the correlations over all the measures again shows the Auditory and Quantitative subtests and the Total Score of Metropolitan Readiness Test as the better predictors of achievement. The Auditory subtest correlates with all three subtests of the Metropolitan Achievement Test (.54 to .63). The correlations between the Auditory subtest and the Teacher Rating of the child's reading ability was .57 and with class ranking of .44.

The Quantitative subtest was correlated with the three subtests on the Metropolitan Achievement Tests (.54 to .65). Beginning-of-the-year Quantitative scores correlated .47 with the Academic Total on the Checklist, .52 and .48 with the Teacher's Rating of Reading and Arithmetic ability, and .41 with Class Ranking.

The other beginning-of-year measures are poorer as predictors. The correlations with the VMI ranged from .25 (class ranking) to .41 (Mathematics, Metropolitan Achievement). The Visual subtest correlations were slightly higher ranging from a low of .16 (Checklist, Social) to a higher of .55 (Mathematics, Metropolitan Achievement). The Language correlations were the lowest of all with most being below .30.

Not surprisingly, the predictor measures were poorest at predicting social development as assessed by the Checklist or the Teacher Rating. These low correlations could indicate that the social measures were measuring something distinct from academic achievement. An alternative explanation is that social behavior and achievement as measured by the potential screening instruments are related (as, indeed, they are at the end of the year) but that social behavior is an unstable characteristic for this age group, thus eliminating any academic-social association from the beginning to the end of year.

The overall pattern of correlations shows some interesting findings. The Auditory and Quantitative subtests of the Metropolitan Readiness were highly correlated (.60) with each other as were the Auditory and Visual (.62). The intercorrelations among the subtests of the Metropolitan Achievement Test were also high (.62 to .69)

A finding of particular interest is that there were high correlations between the standardized achievement tests at the end of the year and the measures which used teacher's judgment of the child's achievement. The Academic Total on the Checklist correlated between .57 and .67 with the subtests of the Metropolitan Achievement Tests. It correlated .71 with the sum of the three subtests. The Teacher's Ratings of General Academic ability

TABLE 17

Correlations Among Predictors and Achievement Measures

| | Metropolitan Readiness | | | | | | Metropolitan Ach. | | | | Checklist | | | Teacher Rating | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VMI | Auditory | Visual | Language | Quantitative | Total | Reading | Mathematics | Language | Total | Academic | Social | Total | Reading | Arithmetic | General Academic | Social Emotional | Class Ranking |
| Predictor Measures (beginning of year) | | | | | | | | | | | | | | | | | | |
| VMI | - | | | | | | | | | | | | | | | | | |
| Met. Reading-Auditory | .31 | - | | | | | | | | | | | | | | | | |
| Visual | .46 | .53 | - | | | | | | | | | | | | | | | |
| Language | .30 | .43 | .48 | - | | | | | | | | | | | | | | |
| Quantitative | .39 | .60 | .62 | .53 | - | | | | | | | | | | | | | |
| Total | .45 | .87 | .80 | .66 | .89 | - | | | | | | | | | | | | |
| Achievement Measures (end of year) | | | | | | | | | | | | | | | | | | |
| Met. Achievement-Reading | .39 | .56 | .37 | .25 | .54 | .56 | - | | | | | | | | | | | |
| Mathematics | .41 | .54 | .55 | .39 | .65 | .66 | .62 | - | | | | | | | | | | |
| Language | .35 | .63 | .43 | .36 | .59 | .65 | .69 | .68 | - | | | | | | | | | |
| Total | .43 | .64 | .47 | .35 | .66 | .68 | .94 | .80 | .86 | - | | | | | | | | |
| Checklist[a]-Academic | .31 | .44 | .35 | .29 | .47 | .50 | .64 | .57 | .67 | .71 | - | | | | | | | |
| Social | .26 | .18[b] | .16[b] | .01[b] | .26 | .18 | .33 | .41 | .40 | .39 | .56 | - | | | | | | |
| Total | .32 | .42 | .34 | .24 | .46 | .46 | .62 | .58 | .66 | .69 | .97 | .72 | - | | | | | |
| Teacher Rating-Reading | .36 | .57 | .45 | .27 | .52 | .60 | .71 | .63 | .67 | .77 | .64 | .34 | .62 | - | | | | |
| Arithmetic | .30 | .41 | .38 | .24 | .48 | .48 | .50 | .66 | .52 | .61 | .52 | .29 | .50 | .67 | - | | | |
| General Academic | .38 | .52 | .45 | .24 | .52 | .57 | .67 | .67 | .68 | .75 | .71 | .49 | .69 | .88 | .78 | - | | |
| Social-Emotional | .33 | .27 | .31 | .08[b] | .32 | .32 | .50 | .51 | .49 | .55 | .63 | .60 | .68 | .58 | .55 | .70 | - | |
| Class Ranking[a] | .25 | .44 | .33 | .20 | .41 | .46 | .42 | .50 | .46 | .52 | .38 | .31 | .41 | .63 | .54 | .66 | .47 | - |

NOTE: Correlations are for early admission students. N = 153. All correlations significant at $p < .05$ or smaller unless otherwise noted.

[a]Data available only for Plan II students N = 129.

[b]Correlation not significant at $p < .05$.

correlated at .67 or .68 with the three subtests of the Metropolitan Achievement Tests and .75 with the sum. Teacher's rating of reading correlated .71 with Reading Achievement on the Metropolitan. The correlation between Arithmetic Rating and the Mathematics Achievement test was .66. It is important to note that the teachers were not aware of the children's test results when they did the ratings. It is impossible to know whether standardized achievement tests or teacher judgment is the more valid measure; but at a minimum, these findings suggest teacher judgments for this age group are a valuable and accurate source of information.

B. Using Cutoff Scores as Criteria

One feasible approach to identifying early admissions students is the use of cutoff scores. All children above the cutoff would be admitted as early admission students; those below would not be. This section discusses what would have happened if cutoff scores had been used to determine admittance last year. One issue examined is whether individual cutoffs need to be adopted for each school. This is done by looking at the effect of a single cutoff contrasted with a school-specific one. The analysis assumes that such a criterion would be intended to identify only a small number of children in each school.

The cutoff selected for this analysis was the first grade mean on the four tests of the Metropolitan Readiness. Those children who scored above the first grade means for their school and for all schools combined were identified, and then the question of how well these children did at the end of the year was explored. The logic of this analysis is that children who display capabilities equal to the average first grader in the beginning of the year show at least the academic capability for success in a first grade class. (No assertions can be made as to their social and emotional readiness for this experience.) A critical question for prediction is: Did the children identified by this method do well in the program?

1. Different Cutoff Scores for Each School

The scores of the EA student on the four tests of the Metropolitan Readiness were compared to the first grade means for their schools. The EA children were classified with respect to whether their scores were less than or equal to/greater than the first grade mean on 0, 1, 2, 3, or 4 of the subtests. The results are presented in Table 18. The number of children from each cell who were recommended for Grade 2 promotion at the end of the year are identified in parentheses. Only Plan II schools are included because the number of first graders tested in the Plan I schools was not sufficient to provide an adequate comparison group for a within school analysis.

Using this type of a criterion produced a similar pattern across all schools. The majority of the EA children scored at or above the first grade mean on none or one of the subtests. Only a few children (17) were above the mean on three or four.

Six children scored above the first grade mean score on all four of the subtests. Four of these six were recommended for Grade 2 at the end of the year. For children who scored high, this criterion seemed to be a valid indicator of later success. The problem with the criterion is that many of the children who would do well in the program over the school year were not outstanding at the beginning of the year (the "late bloomers") and thus would not have been selected.

TABLE 18

Early Admission Students Above the
Within School First Grade Mean on the
Metropolitan Readiness Tests

| School | Total N | Number of EA Students Above Grade 1 Mean on: 0 Tests | 1 Test | 2 Tests | 3 Tests | 4 Tests |
|---|---|---|---|---|---|---|
| Cashell | 22 | 7 | 9 | 4 | 1 | 1 (1) |
| Stedwick | 21 | 13 | 2 | 3 (1) | 3 | 0 |
| Takoma Park | 24 | 14 | 2 | 1 | 4 (2) | 3 (1) |
| Twinbrook | 22 | 6 | 11 (3) | 4 (2) | 0 | 1 (1) |
| Whetstone | 20 | 10 | 6 | 2 | 2 | 0 |
| Wyngate | 26 | 17 (3) | 5 (1) | 2 (1) | 1 (1) | 1 (1) |
| TOTAL | 135 | 67 (3) | 35 (4) | 16 (4) | 11 (3) | 6 (4) |

NOTE: Number of children from that cell recommended for promotion to Grade 2 is given in parentheses.

The difficulties with using promotions to Grade 2 as a measure of success in the program have already been noted. To provide additional information about the end-of-the-year performance relative to the beginning-of-the-year test results, the same classification scheme was used; only this time the children who were ranked at the end of the year within the top six (approximately one quarter) in their class were identified. The results are presented in Table 19. The conclusions to be drawn from these data are very similar to those just presented. Of the 17 children who exceeded the Grade 1 mean on 3 or 4 tests (from Table 18), 15 of them ended up in the top 6 in their class. A high performance on the Metropolitan Readiness meant the child had a high likelihood of later success. However, a low score did not indicate the child would not do well; fifteen children who later were ranked in the top sixth exceeded the first grade mean on none or one of the tests at the beginning of the year.

Interestingly enough, two of the schools where the use of this type of criterion is most inadequate are the two who recommended the greatest number of students for second grade. One interpretation of this is that these schools provided fundamentally different programs for their students than those provided in the other four schools. If these two schools saw their objective as being to cover the first grade curriculum and implemented the program in this way, i.e., by providing a more academic curriculum, it is likely that the beginning-of-the-year test results would be less predictive for the end of the year. Many children who scored relatively low on the Metropolitan Readiness could have been bright children who had never been exposed to many of the things tested by the Readiness tests. After participating in an accelerated academic program, their "true" abilities would be more obvious. The effect of the early admissions program might well have been to overcome differential nursery school and home experiences.

If the nature of the program was more intensive at these two schools, it would be expected that at the end of the year these two schools would have a larger number of children surpassing the first grade level of performance. One indicator of this is the number of children they recommended for second grade. Another would be the comparisons of the early admissions and first grade students on the Metropolitan Achievement Tests which were given at the end of the year.

Children who scored above the first grade mean on 0, 1, 2, or 3 of the Metropolitan Achievement Tests were classified with respect to their performance on the Metropolitan Readiness Tests. The results for each school are presented in Table 20. Summary percentages are presented in Table 21.

The data are consistent with the hypothesis just advanced that the program in some schools was more effective in bringing a certain number of the EA children up to the level of the first grade in that school. The contrasts between the beginning-of-the-year and the end-of-the-year proportions are particularly striking (Table 21). With the exception of two schools, the percentages stayed roughly the same from the beginning of the year to the end of the year. At Twinbrook and Wyngate, there were substantial changes. At Twinbrook, 43 percent of the EA children exceeded the first grade mean for their school on two or three of the Achievement tests. At the beginning of the year, no early admissions children had exceeded the first grade mean on more than two of the Readiness tests. At Wyngate, 35 percent of the EA

TABLE 19

Metropolitan Readiness Performance of
Students in Top Quartile

| School | Total N | Number of EA Students Who Were Ranked in the Top Six and Who Scored Above the Grade 1 Mean on: 0 Tests | 1 Test | 2 Tests | 3 Tests | 4 Tests |
|---|---|---|---|---|---|---|
| Cashell | 6 | 1 | 2 | 2 | 0 | 1 |
| Stedwick | 6 | 0 | 1 | 2 | 3 | 0 |
| Takoma Park | 6 | 0 | 0 | 0 | 4 | 2 |
| Twinbrook | 6 | 1 | 3 | 1 | 0 | 1 |
| Whetstone | 6 | 1 | 2 | 1 | 2 | 0 |
| Wyngate | 6 | 3 | 0 | 1 | 1 | 1 |
| TOTAL | 36 | 6 | 8 | 7 | 10 | 5 |

TABLE 20

Metropolitan Readiness and Metropolitan Achievement Results Relative to Within School First Grade Mean

| | Metropolitan Achievement No. Above Gr. 1 Mean on N Tests | Metropolitan Readiness Number Above Grade 1 Mean on: 0 Tests | 1 Test | 2 Tests | 3 Tests | 4 Tests | TOTAL |
|---|---|---|---|---|---|---|---|
| CASHELL | 0 | 7 | 7 | 1 | 1 | - | 16 |
| | 1 | - | 2 | 1 | - | - | 3 |
| | 2 | - | - | 2 | - | - | 2 |
| | 3 | - | - | - | - | 1 (1) | 1 (1) |
| TOTAL | | 7 | 9 | 4 | 1 | 1 | 22 (1) |
| STEDWICK | 0 | 11 | 2 | - | 3 | - | 16 |
| | 1 | 1 | - | 1 | - | - | 2 |
| | 2 | 1 | - | 1 | - | - | 2 |
| | 3 | - | - | 1 (1) | - | - | 1 (1) |
| TOTAL | | 13 | 2 | 3 | 3 | - | 21 (1) |
| TAKOMA PARK | 0 | 11 | 2 | 1 | - | - | 14 |
| | 1 | 3 | - | - | - | 1 | 4 |
| | 2 | - | - | - | 1 | 1 | 2 |
| | 3 | - | - | - | 3 (2) | 1 (1) | 4 (3) |
| TOTAL | | 14 | 2 | 1 | 4 | 3 | 24 (3) |
| TWINBROOK[a] | 0 | 4 | 4 | 1 | - | - | 9 |
| | 1 | 1 | 1 | 1 | - | - | 3 |
| | 2 | - | 5 (3) | 1 (1) | - | - | 6 (4) |
| | 3 | 1 | 1 (1) | 1 | - | - | 3 (1) |
| TOTAL | | 6 | 11 | 4 | - | - | 21 (5) |
| WHETSTONE | 0 | 8 | 5 | 2 | - | - | 15 |
| | 1 | - | 1 | - | - | - | 1 |
| | 2 | 1 | - | - | - | - | 1 |
| | 3 | - | - | - | 2 | - | 2 |
| TOTAL | | 9 | 6 | 2 | 2 | - | 19 |
| WYNGATE | 0 | 12 (1) | 1 | - | - | - | 13 (1) |
| | 1 | 3 | 1 | - | - | - | 4 |
| | 2 | 1 (2) | 2 | 2 (1) | - | - | 5 (3) |
| | 3 | 1 (1) | 1 | - | 1 (1) | 1 (1) | 4 (3) |
| TOTAL | | 17 | 5 | 2 | 1 | 1 | 26 (7) |

NOTE: Numbers in parentheses indicate number of children from that cell recommended for promotion to Grade 2.

[a]Metropolitan Achievement scores were missing for one child.

TABLE 21

Summary of Metropolitan Readiness Compared to
Metropolitan Achievement on Within School Mean

| | Percentage of EA Students Above Grade 1 on Three or Four Metropolitan Readiness Tests | Percentage of EA Students Above Grade 1 on Two or Three Metropolitan Achievement Tests |
|---|---|---|
| Cashell | 9 | 14 |
| Stedwick | 14 | 14 |
| Takoma Park | 29 | 25 |
| Twinbrook | 0 | 43 |
| Whetstone | 11 | 16 |
| Wyngate | 8 | 35 |

children scored at or above the Grade 1 mean on two of the Achievement tests as compared to 8 percent who exceeded the mean on three or four of the Readiness tests.

A warning must be put forth with regard to interpreting these data. While it is clear that there were more EA children in Takoma Park, Twinbrook, and Wyngate who were like that school's first graders, there are several ways this situation could come about, only one of which relates to the nature of the early admission program in that school. Other explanations are that the first grades in these schools were not equal to the first grade program in the other school, thus making it easier for the early admission students to "catch up." There is also the possibility that the test results were differentially valid across the six schools.

With regard to the issue of predicting success, success now being defined as performance on the Metropolitan Achievement tests, the conclusions are similar to those presented earlier. In general, children who did do well on the Readiness Tests were still performing at a very high level at the end of the school year. (This is indicated by the small number of children in the upper right corner of each school table, i.e., high on Readiness, low on Achievement.) There are also other children, however, who were not performing at an unusually high level in the beginning of the year but were by the end. This later group of children was almost exclusively from Twinbrook and Wyngate. Identifying these children in the beginning of the year would have been impossible.

2. One Cutoff for All Schools

Depending on the extent of the difference in the achievement levels of the schools, the effect of using a county first grade average for all the schools as a cutoff will be that a different set of children will be identified. For the schools with the higher achievement levels, the cutoff will be lower than their school cutoff; and a larger number of children will be identified. For the schools with a low achievement level, the cutoff will be higher and fewer children will be identified.

The results of using the combined first grade mean as a cutoff are shown in Table 22. Comparing this table with the table for the school-specific means (Table 18) shows that the overall impact of using the same mean for all schools was not very dramatic for most schools. Looking only at the number of EA children reaching the mean on three or four tests, Stedwick had three such children with the school-specific mean and five with the combined mean; Takoma Park had seven with the previous cutoff, six under the new one; and Whetstone had two under the previous, cutoff three under the new one. Using a criterion which stated the child had to score at the overall first grade mean on 2 or more of the Readiness Tests would have allowed 12 (67 percent) of the children who would later be recommended for second grade into the program. Using that same criterion, a total of 47 children would have been admitted as early admission candidates as compared to 33 who would have been admitted with a school-specific mean.

TABLE 22

Early Admission Students Above the
Overall First Grade Mean on the
Metropolitan Readiness Tests

| School | Total N | Number of EA Students Above Grade 1 Mean on: 0 Tests | 1 Test | 2 Tests | 3 Tests | 4 Tests |
|---|---|---|---|---|---|---|
| Cashell | 22 | 4 | 4 | 9 | 3 | 2 (1) |
| Stedwick | 21 | 13 | 1 | 2 | 2 | 3 (1) |
| Takoma Park | 24 | 14 | 2 | 2 (1) | 3 (1) | 3 (1) |
| Twinbrook | 22 | 12 (1) | 9 (4) | 1 (1) | 0 | 0 |
| Whetstone | 20 | 7 | 7 | 3 | 2 | 1 |
| Wyngate | 26 | 10 (1) | 5 | 4 (2) | 4 (1) | 3 (3) |
| TOTAL | 135 | 60 (2) | 28 (4) | 21 (4) | 14 (2) | 12 (6) |

NOTE: Number of children from that cell recommended for promotion to Grade 2 is given in parentheses.

Most of the children who were later recommended for Grade 2 but would have been omitted using this particular selection criteria were from Twinbrook. The problem in prediction, however, is a combination of the overall mean which raises the cutoff score for the Twinbrook children along with the fact that these children displayed a different level of achievement by the end of the year.

A comparison of Readiness Test performance to Achievement Test performance in each school using the combined school mean is shown in Table 23 with summary percentages in Table 24. These tables are directly comparable to Tables 20 and 21, which were based on the school specific means.

The effect of using a single standard instead of a school specific one for the Readiness and the Achievement Tests is to raise the number of children in the upper categories at four schools and to lower the number at two. Twinbrook is most affected: 43 percent of the EA children scored above the Twinbrook first grade mean on two or more of the Achievement Tests; however, only 14 percent (N=3) met this criterion with the overall means. The children performed at a high level for their school but were not high relative to the other schools in the program. At Wyngate, the data show the opposite. While one-third of the EA children were above the Wyngate first grade mean on two or more Achievement Tests, even more children (42 percent, N=11) met the criteria using the county means.

The conclusion with regard to predicting achievement is the same as that drawn from the school-specific analysis. Children who score well at the beginning of the year go on to do well. Children who are not achieving at a high level in the beginning may or may not go on to do well in the program.

With regard to a school versus a county standard, the evaluation results suggest that a county standard would impact most severely on children in schools with relatively low levels of achievement. The children in these schools are likely to be capable of success in <u>that</u> first grade but may not be suited for the first grade in other schools. This finding could be reflected in a policy which admitted children as early admission candidates on a school-specific basis with the stipulation that in the event of a move to another school, the standard for that school must be met. The same type of "provisional" promotion could be given to children after completing a year in the program.

C. Identifying Children Through Discriminant Analysis

The method discussed above considered the four tests of the Metropolitan Readiness to be of equal value. Another approach is to ascribe different levels of importance to different tests depending on how well a test distinguishes a first grader from an early admission child. The underlying assumption is that a test on which most five-year-old and six-year-old students score similarly would not be of much use in identifying students for early admission.

TABLE 23

Metropolitan Readiness and Metropolitan Achievement Results
Relative to the Mean for All Comparison First Graders

| | Metropolitan Achievement No. Above Gr. 1 Mean on N Tests | Metropolitan Readiness Number Above Grade 1 Mean on: 0 Tests | 1 Test | 2 Tests | 3 Tests | 4 Tests | TOTAL |
|---|---|---|---|---|---|---|---|
| CASHELL | 0 | 3 | 2 | 3 | - | - | 8 |
| | 1 | 1 | 1 | 3 | 1 | 1 | 7 |
| | 2 | - | 1 | 1 | 2 | - | 4 |
| | 3 | - | - | 2 | - | 1 (1) | 3 (1) |
| TOTAL | | 4 | 4 | 9 | 3 | 2 | 22 (1) |
| STEDWICK | 0 | 11 | - | 1 | 1 | - | 13 |
| | 1 | - | 1 | 1 | - | - | 2 |
| | 2 | 2 | - | - | 1 | 1 | 4 |
| | 3 | - | - | - | - | 2 (1) | 2 (1) |
| TOTAL | | 13 | 1 | 2 | 2 | 3 | 21 (1) |
| TAKOMA PARK | 0 | 12 | 2 | 1 | - | 1 | 16 |
| | 1 | 2 | - | 1 (1) | - | - | 3 (1) |
| | 2 | - | - | - | 1 | 1 (1) | 2 (1) |
| | 3 | - | - | - | 1 | 2 (1) | 3 (1) |
| TOTAL | | 14 | 2 | 2 | 2 | 4 | 24 (3) |
| TWINBROOK[a] | 0 | 9 | 2 | - | - | - | 11 |
| | 1 | 2 | 5 (3) | - | - | - | 7 (3) |
| | 2 | 1 | 1 (1) | - | - | - | 2 (1) |
| | 3 | - | 1 (1) | - | - | - | 1 (1) |
| TOTAL | | 12 | 9 | - | - | - | 21 (5) |
| WHETSTONE[a] | 0 | 5 | 3 | 1 | 1 | - | 10 |
| | 1 | - | 3 | 2 | - | - | 5 |
| | 2 | 1 | 1 | - | - | - | 2 |
| | 3 | - | - | - | 1 | 1 | 2 |
| TOTAL | | 6 | 7 | 3 | 2 | 1 | 19 |
| WYNGATE | 0 | 6 | 3 | - | 1 | - | 10 |
| | 1 | 2 | 2 | - | 1 | - | 5 |
| | 2 | 2 (1) | - | 3 (1) | - | - | 5 (2) |
| | 3 | - | - | 1 (1) | 2 (1) | 3 (3) | 6 (5) |
| TOTAL | | 10 | 5 | 4 | 4 | 3 | 26 (7) |

NOTE: Numbers in parentheses indicate number of children from that cell recommended for promotion to Grade 2.

[a]One child was missing Metropolitan Achievement scores.

TABLE 24

Summary of Comparison of Metropolitan
Readiness to Metropolitan Achievement On Combined Mean

| | Percentage of EA Students Above Grade 1 on Three or Four Metropolitan Readiness Tests | Percentage of EA Students Above Grade 1 on Two or Three Metropolitan Achievement Tests |
|---|---|---|
| Cashell | 23 | 32 |
| Stedwick | 24 | 29 |
| Takoma Park | 25 | 21 |
| Twinbrook | 0 | 14 |
| Whetstone | 16 | 21 |
| Wyngate | 27 | 42 |

Discriminant analysis is a technique designed to statistically distinguish between two or more groups. A discriminant analysis can take several pieces of information and combine them to produce a single score, the discriminant score, such that the scores for the individuals in a group are similar to each other and maximally different from the other group (which also has scores internally similar).

For this evaluation, discriminant analyses were performed contrasting the early admission children with the first graders using various sets of test scores. Other analyses were performed using the early admission children recommended for first grade and those recommended for second as the two groups. For the former analyses, the scores on the tests were combined to produce a typical first grade score against which each early admission child could then be compared. Based on his or her discriminant score, each child was assigned a probability from 0 to 1 that he or she was an early admission or a first grade student. In this way, the analysis is able to pinpoint those early admission students who are more like first graders than their own age mates and, vice versa, those first graders who look more like early admission students.

Discriminant analysis produces several indices for interpreting the results. Each discriminant analysis produces a canonical correlation. The larger the canonical correlation (upper limit = 1.00), the more thoroughly the two groups can be distinguished. A canonical correlation of .28 means the groups aren't very different; one of .96 means the groups can be quite thoroughly distinguished based on the data provided. Discriminant function coefficients are also produced for each analysis. These are the values applied to each test score in computing the discriminant score. The absolute value represents the relative importance of each score to the discriminant score. A test with a coefficient of 1.45 is better able to distinguish the groups than one with a coefficient of .23.

Based on the probabilities associated with the discriminant score, the analysis predicts group membership. Numbers and percentages for the following type of 2X2 table are produced:

| Actual Group | Predicted Group Membership: Early Admission | Predicted Group Membership: Grade 1 |
|---|---|---|
| Early Admission | A | B |
| Grade 1 | C | D |

Students in Cell A "looked like" early admission students and, in fact, were early admission students. Students in Cell B had a higher probability of being first graders than EA students based on their test scores, but they were in fact early admission students. The students in Cell B would be the most likely candidates for promotion to second grade. The students in Cells C and D were first graders who were predicted to be early admission students or first graders respectively.

1. Distinguishing Early Admission Students from First Graders

a) Separate Analyses for Each School

A separate discriminant analysis for each Plan II school was performed using the four subtests of the Metropolitan Readiness Test to distinguish early admission students from first graders. If these groups can be distinguished, it will be possible to use test results to identify early admission students who are most like the first graders in that school at the beginning of the year.

The canonical correlations and the classification results for each of the schools are presented in Table 25. The canonical correlations ranged from .48 to .74. These indicate that the groups can be distinguished with only a moderate degree of success. The percentages of EA children who were more like first graders ranged from 15 to 33.

TABLE 25

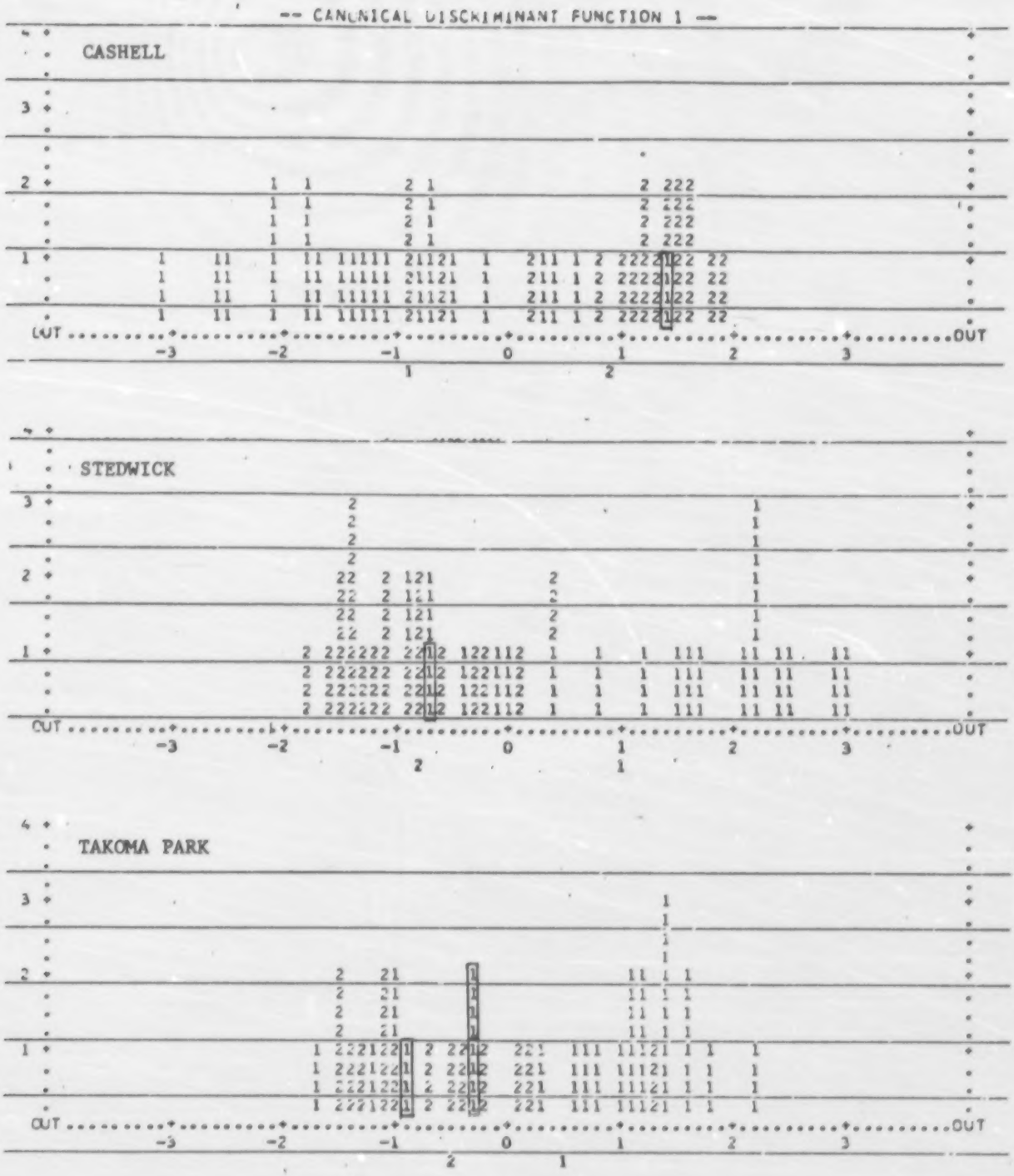
Canonical Correlations and Classification Results for the Metropolitan Readiness Subtests by School

| School | Total Number of Students | Canonical Correlation | Percentage of Total Group Correctly Classified | Percentage of Early Admissions Classified as First Graders | Percentage of First Graders Classified as Early Admissions |
|---|---|---|---|---|---|
| Cashell | 43 | .68 | 81 | 18 | 19 |
| Stedwick | 46 | .69 | 78 | 33 | 12 |
| Takoma Park | 42 | .48 | 67 | 30 | 37 |
| Twinbrook | 44 | .52 | 77 | 19 | 26 |
| Whetstone | 39 | .74 | 79 | 15 | 26 |
| Wyngate | 50 | .69 | 84 | 19 | 13 |

The discriminant scores generated by the analysis are plotted in the histogram in Figure 8. These graphs illustrate the extent of overlap in each school between the first grade and the early admission students. Those EA children recommended for Grade 2 are indicated on the graphs. Marking the scores of these children was done manually; this particular analysis used no information about promotion recommendation.

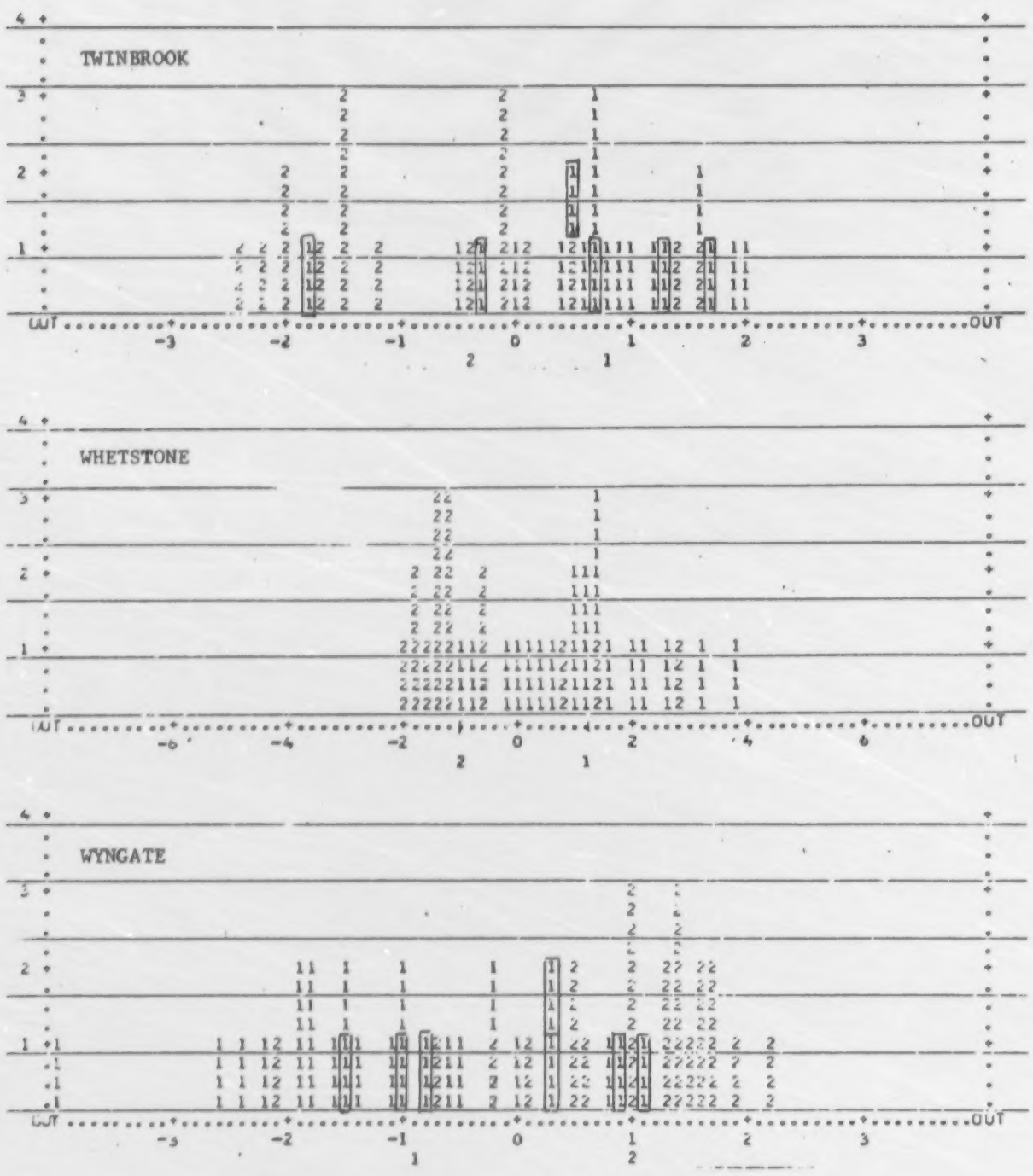
Several caveats are in order to aid in interpreting the graphs:

(1) To understand the histogram, look at how far apart the two groups are. The farther apart, the more distinct the groups are. Also, note the students who are closer to the alternate group than to their own. These are the students who are "misclassified," i.e., predicted to be in the alternate group in the classification tables.




Note: 1 = Early Admission, 2 = Grade 1; ☐ = recommended for Grade 2. See page 57 for instructions on interpreting these graphs.

Figure 8. Histrograms for Discriminant Function Analyses on Beginning-of-year Test Scores.




Note: 1 = Early Admission, 2 = Grade 1; □ = recommended for Grade 2. See page 57 for instructions on interpreting these graphs.

Figure 8. (Continued)

(2) The purpose of the analysis is to produce scores which make the groups as different as possible. The sign of the discriminant scores is not associated with high or low test scores.

(3) Similarly the right-left positioning of the early admission students(1) and the first graders(2) is not related to their relative achievement. This positioning can change from school to school.

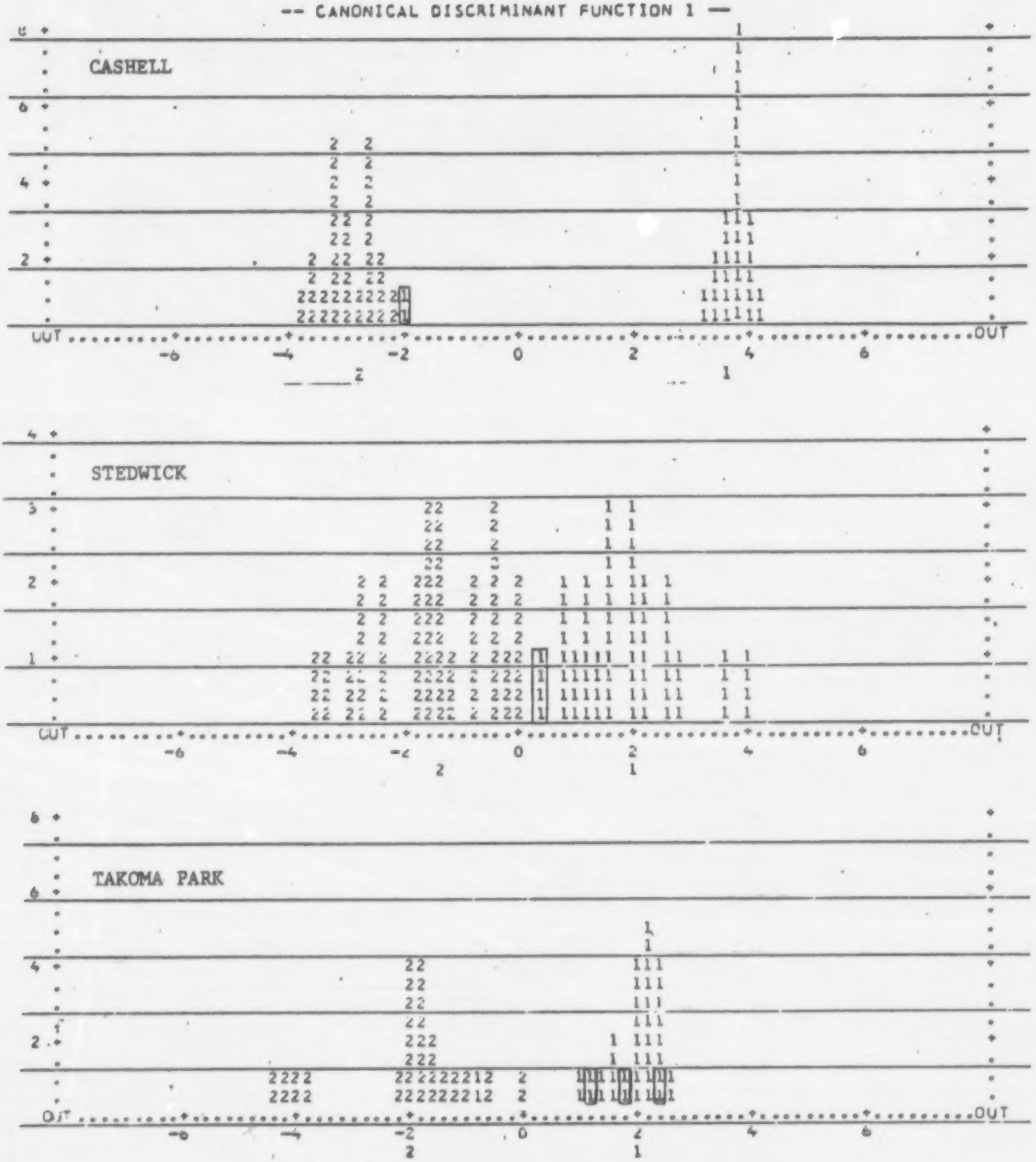
(4) Because an analysis was performed separately for each school, the scale used for frequency (the vertical side of the graph) sometimes changes from school to school.

The results of the analysis are particularly informative with regard to several issues. First, the two grade levels can be more easily distinguished at the beginning of the year at Cashell, Stedwick, Whetstone, and Wyngate than they can at Takoma Park and Twinbrook. The grade level boundaries at these later two schools are less distinct. The fewer differences between the two grades, the more easily five-year-old children could be moved into the first grade. The diversity of ability levels at both grade levels in Takoma Park and Twinbrook is apparently larger than at the other schools.

The prospects of using the Readiness results to identify the children later recommended for promotion are better at some schools than others. At Cashell, it is clear that the child recommended for second grade was much more like a first grader than an early admission child even at the beginning of the year. At Stedwick, the situation is the same, although there were two other EA children with comparable profiles. The Takoma Park children recommended for second grade were more like first graders and so were several of their classmates.

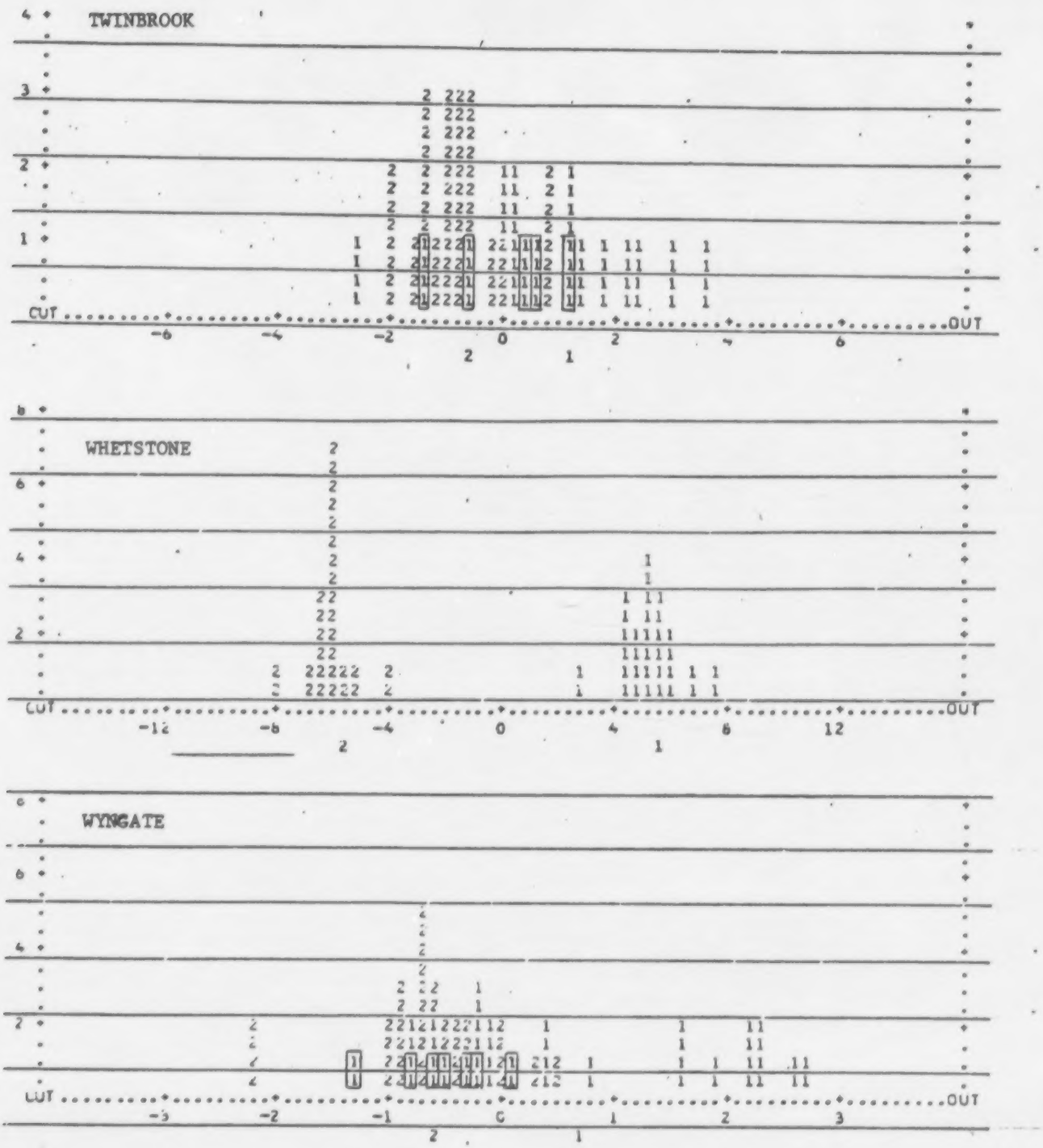
The pictures for Twinbrook and Wyngate with regard to the beginning-of-the-year profiles of the second grade recommendations were very similar. The children in both schools span the gamut from very much like a first grader in that school to a very typical early admission student. For this later group, the tests results may not have been accurate reflectors of the child's skills; or the children may have blossomed in the early admission classes and proceeded to resemble first graders later in the year. At the two schools that recommended the most children for first grade, it would have been impossible using this method at the beginning of the year to identify more than half of the children who would be most successful in the program.

Another question which can be answered by discriminant analysis is how distinct were the first grade and early admission classes at the end of the year. This analysis was based on the three tests from the Metropolitan Achievement Test and the six parts of the Early Childhood Checklist. Figure 9 presents the graphs of the discriminant scores. Table 26 presents the canonical correlations and classification results.




Note: 1 = Early Admission, 2 = Grade 1; 0 = recommended for Grade 2. See page 57 for instructions on interpreting these graphs.

Figure 9. Histograms for Discriminant Function Analysis on End-of-Year Test Scores.




Note: 1 = Early Admission, 2 = Grade 1; D = recommended for Grade 2. See page 57 for instructions on interpreting these graphs.

Figure 9. (Continued)

TABLE 26

Canonical Correlations and Classification Results for the End-of-Year Assessments by School

| School | Total Number | Canonical Correlation | Percentage of Total Group Correctly Classified | Percentage of Early Admissions Classified as First Graders | Percentage of First Graders Classified as Early Admissions |
|---|---|---|---|---|---|
| Cashell | 39 | .96 | 97 | 6 | 0 |
| Stedwick | 44 | .87 | 100 | 0 | 0 |
| Takoma Park | 41 | .90 | 95 | 5 | 5 |
| Twinbrook | 41 | .65 | 80 | 35 | 8 |
| Whetstone | 32 | .99 | 100 | 0 | 0 |
| Wyngate | 50 | .54 | 68 | 48 | 16 |

At four of the six schools, the early admission students could be quite thoroughly distinguished from the first graders at the end of the year. Between 95 and 100 percent of the children could be correctly identified as either first graders or early admission students based on their test scores. The promotion patterns at these schools were generally consistent with this finding. At Cashell, the one child who looked more like a first grader was recommended for second grade. At Stedwick, the child recommended was at the dividing line between the two grades; and his probability of being in either group was about 50-50. At Whetstone, where no EA children were recommended for Grade 2, each grade level consisted of children who looked very much like their classmates and not at all like the other grade. The only school where the trend was contrary was Takoma Park where the groups were distinct, and three recommended for promotion were similar in their discriminant score to their EA classmates.

The canonical correlations and the graphs for Wyngate and Twinbrook indicate a large amount of overlap between the two grades as measured by the end-of-the-year assessments. The difficulty in predicting a grade level based on the assessment results suggest several things. First, because the grade boundaries are so fuzzy, cross-grade movement should not be too difficult for the children involved. Second, the inability to distinguish completely first graders from early admission students could be seen as a measure of the success of the early admission project in meeting one of its objectives, i.e., to take five-year-old children through the first grade curriculum. At the end of the year, a sizeable number of the early admission students in both of these schools were similar to their first grade schoolmates. Either the EA children had made substantial progress, or the first graders in those schools had made little.

The children recommended for promotion to Grade 2 from Wyngate and Twinbrook were for the most part similar to the first graders although in both schools there were other EA children who also looked like first graders. At Wyngate in particular, the results of the classification analysis found 12 EA students to be more like first graders (6 of the 7 recommended for promotion were in this group).

Some cautions need to be put forth with regard to this analysis. The discriminant scores of some of the children recommended for promotion might be taken to indicate that possibly the wrong EA children were promoted to Grade 2. The analysis should not be interpreted in that way for several reasons. The purpose of the analysis is to create two distinct distributions. It does this by searching for and weighting most heavily the individual test on which the first graders and the early admission children differed by the greatest degree. This measure is not necessarily the ability most important for success in a second grade classroom. The school may have considered reading level to be of primary importance in a recommendation for promotion, but the discriminant analysis might give reading much less weight because the first grade and the early admission classes did not differ so much in this area as they did in other areas. The discriminant analyses used the scores the children differed on; these may or may not be the skills which are the most valuable.

b) Combined Analysis Across Schools

Using the four Readiness tests and including all Plan I and Plan II early admission students and first graders in a single discriminant analysis produced the classification results shown in Table 27. The canonical correlation was .45. Overall, only 70 percent (228/324) of the children could be correctly classified based on the optimal combination of the four subtests. Almost 50 of the early admission children and 50 of the first graders were more like the alternate group. This indicates that across all the schools there was a substantial degree of similarity between the two groups and/or that the tests were not sensitive to the differences.

TABLE 27

Classification Produced for Metropolitan Readiness Subtests
(All Groups)

| Actual Group | Number of Cases | Predicted Group Membership: Early Admission | Predicted Group Membership: Grade 1 |
|---|---|---|---|
| Early Admission | 150 | 68% (N=102) | 32% (N=48) |
| Grade 1 | 174 | 28% (N=48) | 72% (N=126) |

The composition by school of the group of the 48 EA children more like first graders is given in Table 28. Use of the same discriminant function for all schools resulted in a set of percentages somewhat different from those produced by a separate function for each school. For example, with the school-specific analysis, 18 percent of Cashell's EA class were more like the Cashell first graders. Using all first grades combined as the comparison group, 50 percent of the Cashell early admission class were more like first graders. At the other extreme, 19 percent of the Twinbrook EA class were predicted to be Twinbrook first graders; only 5 percent were predicted as first graders with all first grades combined.

TABLE 28

EA Classification Produced for Metropolitan Readiness Subtests (All Groups) by School

| School | Number Predicted as First Graders | Percent of EA Class |
|---|---|---|
| Lynnbrook | 1 | 17 |
| Olney | 1 | 100 |
| Poolesville | 1 | 50 |
| Seven Locks | 4 | 50 |
| Cashell | 11 | 50 |
| Stedwick | 8 | 38 |
| Takoma Park | 9 | 39 |
| Twinbrook | 1 | 5 |
| Whetstone | 5 | 25 |
| Wyngate | 7 | 27 |
| TOTAL | 48 | 32 |

An analysis also was performed using the end-of-the-year test results (Metropolitan Achievement Tests and the six-section Early Childhood Checklist). This analysis yielded a canonical correlation of .38; only 68 percent of the EA children could be correctly classified. The classification results are shown in Table 29, and the breakdown by school is presented in Table 30. Only Plan II schools are included because Checklist scores were not available for the Plan I students.

The school breakdown of the 38 EA children more like the combined first grade comparison group shows that exactly half (N=19) were from Wyngate. The next highest group was from Twinbrook where 10 EA children were predicted to be first graders. These data are consistent with the actual promotion recommendations.

TABLE 29

Classification Produced for End-of-Year Assessments (All Groups)

| Actual Group | Number of Cases | Predicted Group Membership: Early Admission | Predicted Group Membership: Grade 1 |
|---|---|---|---|
| Early Admission | 118 | 68% (N=80) | 32% (N=38) |
| Grade 1 | 129 | 10% (N=10) | 90% (N=116) |

TABLE 30

EA Classification Produced for End-of-Year Assessments
(All Groups) by School

| School | Number Predicted as First Graders | Percentage of EA Class |
|---|---|---|
| Cashell | 1 | 6 |
| Stedwick | 6 | 30 |
| Takoma Park | 0 | 0 |
| Twinbrook | 10 | 29 |
| Whetstone | 2 | 12 |
| Wyngate | 19 | 76 |
| TOTAL | 38 | 32 |

The comparison of the school specific with the combined group analysis (Tables 26 and 30) for the end-of-the year assessments shows that while the overall pattern is similar the school-specific analysis is more precise and more consistent with the actual promotion recommendations. The similarity rests in the fact that, using either analysis, Wyngate and Twinbrook are singled out as having had relatively high proportions of EA students like first graders. Also, Cashell has the same student identified either way. The differences between the analysis are considerable; however, the canonical correlation for the combined analysis (.38) is lower than any produced by the school specific analysis (.54 to .99). Also, the overall pattern for the individual schools generated by the findings from the school-specific are more like the actual promotion recommendations. In sum, given the precision to be gained though the school-specific analyses, this approach to indentifying students is the more useful of the two.

2. Distinguishing EA students Recommended for Grade 1 from Students Recommended for Grade 2.

Another set of discriminant analyses were performed to learn how distinct the EA children recommended for Grade 2 were from those recommended for Grade 1. Separate analyses were performed for beginning and end-of-year assessment data.

The analysis on the beginning-of-the-year assessments yielded a canonical correlation of .32 which indicates the two groups were not very distinct at this point in time. The classification results and the discreminant coefficients are presented in Table 31.

Two-thirds of the children were correctly classified. About one-third (N=9) of those recommended for Grade 2 looked more like children recommended for Grade 1. Similarly, one-third (N-41) of those recommended for first looked more like those recommended for second.

TABLE 31

Discriminant Analysis Results on the
Beginning-of-the-Year Assessments for EA Children
Recommended to First or Second Grade

| Actual Group | Number of Cases | Predicted Group Membership: Recommended for Grade 1 | Predicted Group Membership: Recommended for Grade 2 |
|---|---|---|---|
| Recommended for Grade 1 | 125 | 67% (N=84) | 33% (N=41) |
| Recommended for Grade 2 | 25 | 36% (N=9) | 64% (N=16) |

The discriminant coefficients show that the measure which uniquely contributed the most to distinguishing the two groups, weak as the distinction was, was the Quantitative test of the Metropolitan Readiness (coefficient = .69). The next most useful were the Language test (-.39) and the VMI (.38).[1]

The poor ability of the predictor tests to identify the students who would be recommended for Grade 2--even when the tests are combined in such a way as to be maximally useful--can be interpreted in several ways. The most likely source of the difficulty is the varying achievement levels of the different schools which were mentioned earlier. A second contributing factor could be that some children did not test appropriate to their achievement levels, i.e., for some unknown number of children the test results are invalid. A third possible factor is the "blossoming phenomenon" described earlier. Some children entered the program with average levels of achievement, thrived in their classrooms, and, by the end of the year, were exceptional. The importance of these last two factors can be measured by looking at how distinct the two groups are at the end of the year.

The results of the discriminant analysis on the three tests of the Metropolitan Achievement Tests and the six tests of the Early Childhood Checklist are presented in Table 32 and graphed in Figure 10. Only Plan II students were included since the Plan I students had no Checklist data. An interesting by-product of this analysis is that the first graders are also classified as more likely to be children promoted to first or second grade.

[1]This result does not contradict the findings reported earlier on correlations with promotion. Those findings were for each tests considered individually; this analysis considers all tests simultaneously.

TABLE 32

Discriminant Analysis Results on the End-of-Year Assessments for EA Children Recommended to First or Second Grade

| Actual Group | Number of Cases | Predicted Group Membership: EA Recommended for Grade 1 | Predicted Group Membership: EA Recommended for Grade 2 |
|---|---|---|---|
| EA Recommended to Grade 1 | 101 | 82% (N=83) | 18% (N=18) |
| EA Recommended to Grade 2 | 17 | 6% (N=1) | 94% (N=16) |
| First Graders | 129 | 26% (N=33) | 74% (N=96) |

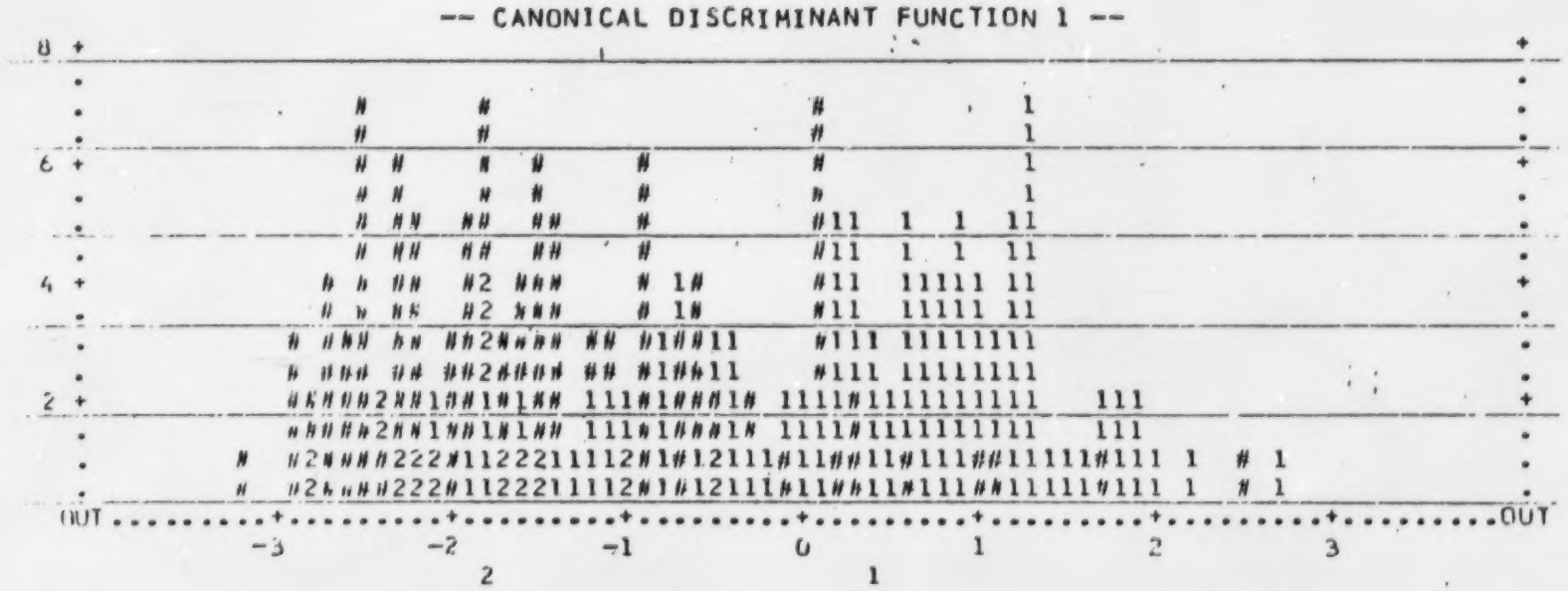
The canonical correlation for the analysis was .61 which was a considerable improvement over the beginning-of-the-year scores. Of the 17 Plan II students recommended for promotion, 16 were predicted as members of this group.[1] The one child remaining was right on the border-line between the two groups. Of those recommended for Grade 1 (N=101), 18 EA children were predicted as members of the Grade 2. Identifying these children by schools shows that these children were distributed evenly across the six Plan II schools with one notable exception (Table 33). Five of the schools had one, two or three children who, based on their scores, looked more like the children recommended for Grade 2; Wyngate, the exception, had eight. All these children were in addition to the children actually recommended for Grade 2. Surprisingly, one-fourth of the first graders looked more like the early admission students recommended for Grade 1.

TABLE 33

"Misclassifications" by School

| School | Early Admission Students: Recommended to 1; Predicted to be Recommended to 2 | Early Admission Students: Recommended to 2; Predicted to be Recommended to 1 | First Graders: Predicted to be Recommended to 1 |
|---|---|---|---|
| Cashell | 2 | 0 | 4 |
| Stedwick | 2 | 0 | 5 |
| Takoma Park | 3 | 0 | 8 |
| Twinbrook | 1 | 1 | 11 |
| Whetstone | ? | 0 | 3 |
| Wyngate | 8 | 0 | 2 |
| TOTAL | 18 | 1 | 33 |

[1]The eighteenth child was missing Metropolitan Achievement scores.




Note: 1 = EA Recommended for Grade 1.
2 = EA Recommended for Grade 2.
# = First Graders.

Figure 10. Histogram for Discriminant Function Analysis with Promotion Recommendations using End-of-Year Assessments.

The discriminant coefficients showed that, of the end-of-the-year measures, the Language score on the Checklist made the greatest relative contribution to identifying the EA students recommended for promotion (coefficient= -.51). The next most important were the Mathematics test of the Metropolitan Achievement Test (-.39) and the Mathematics score on the checklist (-.28). The combination of the Checklist sections and the standardized test adds strength to the conclusions by discrediting any hypotheses that the effect was due to teacher bias in rating students.

3. Summary of Discriminant Analyses

In conclusion, the analytic technique of differentially weighting and combining the test scores resulted in several interesting findings. Attempts to distinguish first graders from early admission students within each Plan II school based on the beginning-of-the-year measures met with varying degrees of success. The degree of overlap between the two groups in their achievement levels varied from school to school. In one school, 15 percent of EA children were identified as being like first graders; in another school, the figure was 33 percent. If this procedure had been used, 30 children would have been admitted to the early admission program; 11 of these were the children recommended for Grade 2 placement. The remaining seven recommended for Grade 2 would not have been admitted.

The end-of-the-year analysis was considerably more powerful in predicting group membership. In some schools, the early admission classes and first grade classes were very different; thus, children would be easily identified as a member of one or the other. In other schools, the two grade levels were more difficult to distinguish. Appropriately, the two schools with the most overlap between the two grade levels also recommended the largest number of EA children for Grade 2.

When the beginning-of-the-year scores of the EA children recommended for Grade 2 were contrasted with those of the EA children recommended for Grade 1, the two groups could be distinguished with only moderate success. Many more children were predicted to be members of the group eventually recommended to Grade 2 than actually were. Furthermore, 9 of the 25 later recommended for second grade were not identified. Five of these children were from Twinbrook, the school most severely impacted by this approach.

The end-of-the-year analysis constrasting EA students recommended for Grade 1 with those recommended for Grade 2 also showed that many more children had profiles like the EA children recommended for Grade 2 than were so recommended. The decision not to place these children in Grade 2 was not necessarily a bad one; however, as the early admission/first grade analysis showed, being like the other early admission children promoted to Grade 2 is no guarantee an EA student would be like children at the next grade level in his/her school.

## IV. PARENT INTERVIEW

Telephone interviews were conducted with parents of the early admission children to learn how parents felt about the program. The telephone interviews were conducted in two waves. The first wave of interviewing took place in December, 1978, and involved 36 percent of the interviewees (N=49). The second wave of interviewing took place during March and April, 1979. The remaining 64 percent (N=89) were involved in the second wave. Fifteen parents could not be reached for an interview.

The interviews were conducted by trained interviewers who used a standard interview protocol. Questions were asked about parents' expectations and impressions of the program and their feelings about promotion to Grade 2. After the completion of the first wave of questioning, it became apparent that some important questions had been omitted from the questionnaire. To correct this situation, the questionnaire for the second wave was reworked with new items added. Consequently, questions have differing numbers of respondents depending upon whether they appeared on one or both forms of the questionnaire and upon the numbers of nonrespondents for each item.

Most questions were fixed choice followed by a request for an explanation of the answer. The explanations were open-ended. For example:

> Do you believe (CHILD'S NAME) is missing some of the nonacademic aspects of the regular kindergarten program?
>
> Yes ____ No ____ Undecided ____ No basis for opinion ____
>
> If "Yes" or "undecided" was the answer, the interviewer followed up by asking, "What aspects do you think were missed?" Open-ended responses were coded and tabulated for the analysis.

### A. Program Issues

Overall, the parents' responses to the early admission program can only be characterized as very positive. When asked if their child was getting the benefits from the program that they had originally hoped for, 92 percent of the respondents answered yes. Additionally, over half (54 percent) felt their children were getting benefits they had not expected. When asked to describe what benefits their children were receiving, 54 percent of the parents listed benefits of an academic nature and 29 percent listed social benefits, such as maturity or self-confidence. Other benefits included increased stimulation, an interest in school, individualization, and the teacher.[1] (Results for these questions and the other questions related to the program are presented in Table 34.)

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[1]Parents could give more than one answer to these questions; therefore, responses do not total to 100 percent.

TABLE 34

Parent Responses to Questions on Program Issues

| Question | Number Responding | Percentage of Respondents | Percentage of Responses[1] |
|---|---|---|---|
| Child getting benefit originally hoped for from program? | 136 | | |
| Yes | | 92 | |
| No | | 4 | |
| Some yes, some no | | 4 | |
| What benefits? | 119 | | |
| Academic progress, child is succeeding | | | 54 |
| Socialization, maturity, self-confidence | | | 29 |
| Stimulation, shows interest | | | 15 |
| Individualization, work at own pace | | | 10 |
| Teacher is good, well-organized | | | 5 |
| Child getting benefits from program you did not expect? | 131 | | |
| Yes | | 54 | |
| No | | 46 | |
| What benefits? | 73 | | |
| Academics, science, reading, math | | | 53 |
| Socialization, independence, responsibility, work habits, stimulation | | | 42 |
| Cultural programs; enrichment, art, music | | | 12 |
| Most successful aspects of the program? | 121 | | |
| Academics, math, reading | | | 43 |
| Socialization, group activities, maturity, self-confidence | | | 32 |
| Teacher | | | 18 |
| Individual attention, no pressure | | | 11 |
| Stimulation, learning experience | | | 11 |
| Overall program | | | 10 |
| All day | | | 5 |
| Least successful aspects of program? | 121 | | |
| None or don't know | | | 55 |
| Program operation (not enough parent contact, goals not defined, classes too large, screening) | | | 19 |
| Teacher (lacks creativity, not enough experience, discipline problems) | | | 12 |
| Stress, fatigue all day pressure | | | 10 |
| Academics | | | 5 |

TABLE 34 cont.

| Question | Number Responding | Percentage of Respondents | Percentage of Responses[1] |
|---|---|---|---|
| Difficulty adjusting to an all-day program? | 135 | | |
| Yes | | 18 | |
| No | | 75 | |
| Yes and no | | 7 | |
| Tired or irritable after school? | 128 | | |
| Yes | | 37 | |
| No | | 63 | |
| Missing nonacademic aspects of regular kindergarten? | 134 | | |
| Yes | | 12 | |
| No | | 87 | |
| Undecided | | 1 | |
| Would you suggest changes in program? | 86 | | |
| Yes | | 41 | |
| No | | 47 | |
| Undecided/Split | | 13 | |
| What changes? | 50 | | |
| Program opration (screening, parent involvement, etc.) | | | 90 |
| Teacher (more experienced) | | | 16 |
| Day too long, class too big | | | 16 |
| Academics | | | 12 |
| Alternative to Early Admission? | 88 | | |
| Yes | | 54 | |
| No | | 36 | |
| No opinion | | 10 | |
| Type of alternative | 51 | | |
| All day kindergarten | | | 63 |
| Something between half-day, all-day, half-academic, and half-play | | | 20 |
| K-1, enriched kindergarten | | | 16 |
| Program (science, sports, music) | | | 7 |

[1]Parents could give more than one answer for these questions; therefore, responses do not total to 100 percent.

Parents also were asked what they considered to be the most successful aspects of the program. Again, parents were impressed by the academic aspects of the program (43 percent) and the social opportunities it presented for their child (32 percent). Parents also were pleased with their child's teacher (18 percent), the individual attention (11 percent), the learning experience (11 percent), and the overall program (10 percent).[1]

Parents were specifically queried about possible negative aspects of the program. When asked what they considered to be the least successful aspects of the program, parents most often replied none or don't know (55 percent). About 20 percent of the responses listed some programmatic aspects such as class size, the need for earlier screening, or the lack of defined goals. About 10 percent listed teacher-related aspects (lacks creativity, inexperienced) and another 10 percent noted "fatigue factors" such as stress, tiredness, or not enough playtime.[1]

Adjusting to an all-day program was not really seen as much of a problem by the parents. Less than one-fifth of the parents felt their child had had difficulty in this regard. However, over one-third felt their child was tired or irritable after returning home. Apparently, a number of parents did not attribute their child's tiredness to the all-day program or did not really see this as a problem for their child. The overwhelming majority of the parents (86 percent) felt that their child was <u>not</u> missing any of the nonacademic aspects of the regular kindergarten.

There is one last program issue related to changes parents would like to see in the program. Less than half of the parents (41 percent) wanted the program changed in some way. The great majority of the requested changes related to program operations, i.e., the screening, parent involvement, and feedback.[2] When asked whether they felt MCPS should offer an alternative to the early admission program, over half the parents said yes. The most frequently suggested alternative was an all-day kindergarten (63 percent of the parents).

B. Promotion Issues

The issue of promotion to second grade is closely linked to the issue of motivation for enrolling a child in the program. A diversity of opinions existed as to the wisdom of accelerating a young child beyond his/her age-mates. Based on discussions with parents (and based on the evaluation findings), it can be concluded that support for the early admission program is not synonymous with a desire to place the child in second grade. The tabulations on the questions related to promotion are presented in Table 35.

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[1]Parents would give more than one answer for these questions; therefore, responses do not total to 100 percent.

[2]Parents could give more than one answer for these questions; therefore, responses do not total to 100 percent.

TABLE 35

Parent Responses to Questions
Related to Promotion

| Question | Number Responding | Percentage of Respondents | Percentage of Responses[1] |
|---|---|---|---|
| Why applied for program? | 141 | | |
| Child is ready, mature | | | 73 |
| Child has prior school experience | | | 43 |
| Wanted all-day K or K-1 program | | | 41 |
| Child is bright, interested in learning | | | 29 |
| Program offers academics, challenge | | | 21 |
| Things in program would be good for child? | 125 | | |
| Academics | | | 41 |
| Stimulation, challenge | | | 29 |
| All day | | | 24 |
| Individualization | | | 12 |
| Hope for Grade 2 promotion when enrolled? | 88 | | |
| Yes | | 13 | |
| No | | 67 | |
| Undecided/No expectation | | 20 | |
| Hope for Grade 2 promotion now? | 88 | | |
| Yes | | 17 | |
| No | | 65 | |
| Undecided/No Expectation | | 18 | |
| Would have enrolled child directly in normal first grade? | 25 | | |
| Yes | | 40 | |
| No | | 48 | |
| Undecided | | 12 | |
| Allow promotion to Grade 2? | 87 | | |
| Yes | | 29 | |
| No | | 46 | |
| Undecided | | 25 | |
| Acceleration to Grade 2 creates problems for child? | 79 | | |
| Yes | | 53 | |
| No | | 28 | |
| Undecided | | 19 | |
| Non-promotion to Grade 2 creates problems for child? | 134 | | |
| Yes | | 12 | |
| No | | 81 | |
| Undecided | | 7 | |

[1]Parents could give more than one answer for these questions; therefore, responses do not total to 100 percent.

When asked why they had applied for the early admission program, the majority of parents (73 percent) responded that their child was ready or mature. Other important reasons were that the child had had preschool experience (43 percent) or that an all-day kindergarten or K-1 type program was desired (41 percent). Parents also were asked what aspects of the program had made them think it would be good for their child. The most frequent response was related to the academic nature of the program (41 percent) followed by comments about the challenge, the stimulation, and the advanced kindergarten nature of the program (29 percent). One-fourth of the parents were attracted to the all-day nature of the program.[1]

Parents were asked whether they had hoped their child would be promoted to Grade 2 at the beginning of the year and whether they hoped so at the time of the interview. Two-thirds (67 and 65 percent, respectively) said no. When asked whether they would have enrolled their child directly into a first grade classroom, half replied that they would not have. (Responses on this last question are available from only 25 parents; so the results should be accepted with caution.)

Regardless of their hopes for or against promotion to Grade 2, based on the school's recommendation, parents might be willing to allow it. Many of the parents (46 percent) said they would not. Were promotion not to be allowed, the primary reason was the child's social and emotional development (78 percent of the responses to the question, "Why not?"). Not surprisingly given these sentiments, over half of the parents responded positively when asked whether they thought acceleration would create problems for their child.

The reverse of that situation, problems associated with nonpromotion to second grade, also was asked about. A large majority of the parents (81 percent) felt that not promoting the child to second grade would not create problems for the child. Parents indicated that problems would arise only if many of the child's classmates were promoted to Grade 2.

Overall, the results of the parent interviews indicate that promotion to Grade 2 was not a vital part of the early admission program as the parents perceived it. Many were even opposed to this idea. They liked the program because of the academic opportunities it presented. The program was an alternative to the traditional half-day kindergarten for their children whom they saw as ready for a more intensive, individualized experience. Perhaps the most adequate summary of the parents' feelings about the program is presented by a sample of the comments parents volunteered at the end of the interview:

> Very happy with program. Hope it continues.
>
> There is a need for an all-day program for five-year olds. Pleased with program overall.
>
> Need more communication between parents and schools.

---

[1]Parents could give more than one answer for these questions; therefore, responses do not total to 100 percent.

Program good for some but not for all. Should be both kinds of kindergarten for this reason.

Is there going to be a program next year? ...Appreciate program...Very positive for us and him...Like to see this as an option...Future second or first grade placement immaterial.

## V. ATTITUDES OF TEACHERS AND PRINCIPALS

At the end of the school year, teachers and principals who had participated in the Early Admission Program were interviewed to learn their feelings about the project. Ten principals and ten teachers were interviewed.

### A. Principals

All ten principals agreed that they would want the program in their schools. The primary reason, given by half the principals, was that they felt the children were ready for this experience. The results on this question and the others to be discussed in the following section are in Table 36.

When asked what proportion of early admission children they originally believed would be promoted to Grade 2 at the end of the year, the principals gave a variety of answers. In the Plan I schools, those with only a small number of early admission children, one principal responded all, two said most, and one said only a few. One Plan II principal responded most, three thought only a few, one said none, and the remaining principal had no preconceived idea. All, with the exception of two Plan I principals, said they did not change their opinion about promotion to Grade 2 over the course of their year. The two Plan I principals responded based on their personal knowledge of the progress/lack of progress of the few early admission students in their school. Several principals noted the importance of the child's social development in making the decision for Grade 2 promotion.

Principals were asked to give what they believed to be parents' reasons for wanting the early admission program for their child. Six of the principals felt the parents wanted "a K-1 program in which the Grade 1 curriculum was offered." One felt an all day kindergarten was the type of program the parents wanted. One felt a combination of these two types was desired. Of the remaining principals, one Plan I principal felt a regular Grade 1 program in a normal Grade 1 classroom was desired. The other didn't answer. When asked if they felt most parents wanted their children promoted to Grade 2, the Plan II principals unanimously responded no. In contast, three of the Plan I principals said yes. Nine out of the ten principals agreed the parents did not change their opinion over the course for the year.

The principals felt that the early admission program had a number of strengths including:

- The oppportunity to introduce Grade 1 material and provide for greater achievement
- The opportunity to place children appropriately
- The full day of experiences

TABLE 36

Results of the Principal Interviews

When the early admission program was first proposed or discussed, did you want the program in your school?

| | |
|---|---|
| Yes | 10 |
| No | 0 |

What proportion of the pupils in the early admission program did you originally believe would be promoted to Grade 2 at the end of the year?

| | |
|---|---|
| All | 1 |
| Most | 3 |
| Only a few | 4 |
| None | 1 |

Have you changed your opinion about promotion of the early admission pupils to Grade 2 since the beginning of the year?

| | |
|---|---|
| Yes | 2 |
| No | 8 |

What kind of program do you believe most of the parents who enrolled their child in the early admission program wanted?

| | |
|---|---|
| An all-day kindergarten | 1 |
| A K-1 program in which the Grade 1 curriculum was offered | 6 |
| A regular Grade 1 program in a normal Grade 1 classroom | 1 |
| Other | 1 |
| No response | 1 |

Do you believe that <u>most</u> parents wanted their child to be promoted to Grade 2 at the time they enrolled the child in the program?

| | |
|---|---|
| Yes | 3 |
| No | 7 |

Do you believe there has been a change in the attitude of parents toward promotion to Grade 2 over the year?

| | |
|---|---|
| Yes | 1 |
| No | 9 |

The program as they saw it also had some weaknesses and problems. The administrative problems associated with the late start-up and the communications with parents were sources of difficulty. Some principals were bothered by the research component of the project including philosophical disagreements with DEA and scheduling of the assessments. Three principals mentioned that more money for materials was needed; two felt another adult in the classroom would be helpful.

Overall, the principals appeared pleased with the program. It is clear that they saw it (and felt the parents saw it) primarily as an opportunity to provide five-year-olds with an all-day program which would acquaint them with first grade material. They did not hope to be able to promote all or even most of the children to second grade. They were pleased with the program in that it provided appropriate experiences for their five-year-olds. They were dissatisfied insofar as it began after the beginning of school and involved some lack of communication with the central office. It is safe to assume that these problems were primarily due to the newness and experimental nature of program and could be overcome were the early admission classrooms to continue beyond the planned two years.

B. Teachers

The ten teachers who participated in the program were asked many of the same questions asked the principals. Eight of the ten had originally wanted to work in the program in their school. The foremost reason for wanting to do so was that working in the program would be a good experience (four teachers) and a personal challenge (three teachers). Of the two teachers who did not want to work in the program, one felt the program was against her personal philosophy; and the other thought there was not a defined program. (See Table 37 for tabulations on this item and some of the other items discussed in this section.)

The teachers were somewhat similar to the principals in their expectations for promotion to Grade 2. Most (N=6) thought no more than a few children would be promoted. Two teachers, both from Plan I schools thought that all would be promoted. Two teachers felt no children would be promoted to second grade. One was from the school where the principal felt the same way (no children were promoted to second grade from that school). The other teacher was new to the school and felt she had no basis on which to form an opinion. Over the course of the year, four of the ten teachers changed their opinion about the number of children to be promoted to Grade 2. Two teachers felt the proportion would be higher than their original expectations; two felt it would be less.

When asked what kind of program they felt parents wanted, six of the ten stated that parents wanted a K-1 program with a Grade 1 curriculum. Most of the teachers (N=7) felt parents did not want their children promoted to Grade 2. Two of the three others were teachers in Plan I schools. Most of the teachers (N=6) also felt that parents did not change their opinion over the course of the year. The issue of promoting students to Grade 2 did not generally create problems for the teachers. The three teachers who did experience problems listed several sources including parental pressure, self-doubt about the decisions, and the emphasis placed on promotion to Grade 2 by the program.

TABLE 37

Results of Teacher Interviews

When the early admission program was first proposed or discussed, did you work in the program at your school?

| | |
|---|---|
| Yes | 8 |
| No | 2 |

What proportion of the pupils in the early admission program did you originally believe would be promoted to Grade 2 at the end of the year?

| | |
|---|---|
| All of them | 2 |
| Most of them | 1 |
| Only a few | 4 |
| None | 2 |

Have you changed your opinion about promotion of the early admission pupils to Grade 2 since the beginning of the year?

| | |
|---|---|
| Yes | 4 |
| No | 6 |

What kind of program do you believe most of the parents who enrolled their child in the early admission program wanted?

| | |
|---|---|
| An all-day kindergarten | 6 |
| A K-1 program in which the Grade 1 curriculum was offered | 1 |
| A regular Grade 1 program in a normal Grade 1 classroom | 1 |
| Other | 1 |

Do you believe that most parents wanted their child to be promoted to Grade 2 at the time they enrolled the child in the program?

| | |
|---|---|
| Yes | 3 |
| No | 7 |

Do you believe there has been a change in the attitude of parents towards promotion to Grade 2 over the year?

| | |
|---|---|
| Yes | 3 |
| No | 6 |

Has the question of promoting early admission pupils to Grade 2 created any problems for you?

| | |
|---|---|
| Yes | 3 |
| No | 7 |

Have you encountered any broad, general teaching problems in working with the program this year?

| | |
|---|---|
| Yes | 0 |
| No | 9 |
| No Response | 1 |

Have you encountered any teaching problems in working with pupils of this age?

| | |
|---|---|
| Yes | 3 |
| No | 7 |

The teachers had many comments to make about the strengths and weaknesses of the program and the changes they would like to see made. The teachers were particularly pleased with the all-day nature of the program. They felt it provided them an opportunity to better meet the needs of individual children with each child working at his or her own pace. One teacher stated the program had made her evaluate what individual children were ready for rather than making them meet a set curriculum. Teachers also felt the support they received from parents and principals had been a strength of the program.

Weaknesses in the program included the need for an aide, the need for more money for materials, and the need for a set of specific objectives for the program. Teachers also felt the late start-up at the beginning of the year was a problem. One teacher felt the parents should be counseled at the beginning of the summer. However, another thought the children should attend school for a month before a decision is made. Planning time was another issue the teachers disagreed on. Some felt the provision of planning time was a strength of the program; others felt there wasn't enough of it, and so it was a weakness.

Teachers were unanimous in stating they had no teaching problems with the program. Seven teachers also felt that they had had no problems with the children. Those who did were mostly bothered by the varying maturity levels of the children. One teacher felt the children were tired.

The teachers like the principals were generally pleased with the program. "A super program," one teacher labelled it. The teachers enjoyed participating in it because it provided them a full day to work with the children and also allowed them to meet and share ideas with other teachers. Their responses and comments showed that on the issue of preparing children for Grade 2, the teachers' opinions ranged from staunch opposition through some reservation all the way to supportive. They generally felt only a few select children would be ready for promotion to Grade 2, but the opportunity to expose all their children to more experiences than are usually provided in a regular kindergarten program was a welcome one.

Appendix A

Description of Measures

Developmental Test of Visual Motor Integrative (VMI)
Metropolitan Readiness Test
Metropolitan Achievement Tests
Early Childhood Checklist
Teacher Rating Scale
Rank Ordering

## APPENDIX A

## INSTRUMENTS

### I. SCREENING INSTRUMENTS

Developmental Test of Visual-Motor Integration (VMI). The VMI was selected as a possible screening instrument because of the relationship between visual-motor development and cognitive development. The test consists of a series of geometric forms which the pupil copies free-hand with pencil and blank paper. The portion of the test which is administered to children between 2-8 years of age includes 15 figures which range in difficulty from single vertical and horizontal lines to touching and/or intertwined forms.

The raw score is the number of forms correctly reproduced up to three consecutive failures. The maximum raw score for children aged 2-8 years is 15. The VMI was administered only to EA students.

Metropolitan Readiness Test. This test is designed to measure skills essential to beginning reading and mathematics. It is made up of four subtests: Auditory (29), Visual (26), Language (18), and Quantitative (24). The numbers in parentheses indicate the maximum score on each subtest. The total score is the sum of the four subtests, with a perfect score being 97.

The test is multiple choice. Instructions and items are read to pupils. Most items and answer choices are pictures, though some include letters and numbers. The test is designed for group administration. Level II, Form P of the Metropolitan Readiness Test was administered to the EA students and the comparison first graders. Level II is designed for use at the end of kindergarten and the beginning of Grade 1.

### II. End-of-Year Achievement Measures

Metropolitan Achievement Test. The Metropolitan Achievement Tests are designed to provide data about the student achievement in skill and content areas. Three of the five subtests from the Survey battery were administered. Those three subtests with their maximum scores were Reading (55), Language (40), and Mathematics (40). An overall perfect score on the three parts of the test administered was 135.

Like the Metropolitan Readiness, the Metropolitan Achievement Tests are multiple-choice and designed for group administration. Each student reads the items and completes the tests within a given time limit. Primary 1, Form JS was administered to the EA students and the comparison first grade students.

Early Childhood Checklist. The Early Childhood Checklist was developed by the early admission and first grade teachers whose classes were involved in the evaluation.

The Checklist consisted of a list of behaviors. The teacher was to indicate whether or not the student could do each behavior described. The Checklist assessed mastery in six areas: Language Arts, Math, Science, Social Studies, Work Habits, and General Social. Language Arts, Math, Science, and Social Studies were summed to give an Academic Total (perfect score = 44). Work Habits plus General Social gave a Social Total (perfect score = 12).

The Checklist was designed to provide early admission teachers with a standard of first grade achievement to assist them in making recommendations for promotions to second grade. The 25th percentile for each school's first grade was determined, and all EA children in that school who scored above its cutoff point were to be seriously considered for promotion to second grade. The Checklists were completed only in the Plan II schools.

Teacher Rating Scale. The Rating Scale is a short, gross level estimate of the child's abilities in Reading/Language Arts, Arithmetic, General Academic Skills, and Social-Emotional Behavior. The teachers were asked to rate the child's grade level performance in each area using the following scale:

Kindergarten.....1
Beginning Grade 1.....2
Midyear Grade 1.....3
End Year Grade 1.....4
Beginning Grade 2.....5
MidYear Grade 2.....6
End Year Grade 2.....7
Above Grade 2.....8

A rating scale was completed for each early admission child but not for the first graders.

Rank Ordering. Each teacher rank ordered her early admission students from most able to be promoted to Grade 2 to least able to be promoted to that grade level.

Appendix B

Mean Scores for Plan II Schools

Developmental Test of Visual Motor Integration (VMI)
Metropolitan Readiness Test (Total Score)
Teacher Ratings
Metropolitan Achievement Tests
Early Childhood Checklist

TABLE B.1

Mean VMI Scores by School

| Schools | Early Admission |
|---|---|
| Plan I | |
| Total | 10.9 (N=17) |
| Plan II | |
| Cashell | 10.0 (N=22) |
| Stedwick | 10.9 (N=21) |
| Takoma Park | 10.2 (N=24) |
| Twinbrook | 9.3 (N=21) |
| Whetstone | 9.7 (N=20) |
| Wyngate | 10.6 (N=27) |
| Total (N=134) | 10.1 (N=134) |
| TOTAL | 10.2 (N=151) |

NOTE: The VMI was not administered to first graders.

TABLE B.2

Mean Scores on the Metropolitan Readiness Test (Total Score) by School

| Schools | Early Admission | Grade 1 Comparison |
|---|---|---|
| Plan I | | |
| Total | 62.5 (N=17) | 66.7 (N=44) |
| Plan II | | |
| Cashell | 67.4 (N=22) | 83.1 (N=21) |
| Stedwick | 58.1 (N=21) | 79.3 (N=25) |
| Takoma Park | 54.6 (N=23) | 68.2 (N=20) |
| Twinbrook | 48.4 (N=21) | 62.1 (N=23) |
| Whetstone | 55.5 (N=20) | 74.5 (N=19) |
| Wyngate | 57.8 (N=26) | 78.6 (N=25) |
| Total | 57.1 (N=133) | 74.4 (N=133) |
| TOTAL | 57.7 (N=150) | 72.5 (N=177) |

TABLE B.3

Mean Teacher Ratings by School

| Schools | Reading | Arithmetic | General Academic | Social-Emotional Behavior |
|---|---|---|---|---|
| Plan I | | | | |
| Total (N=18) | 3.7 | 3.4 | 3.5 | 2.8 |
| Plan II | | | | |
| Cashell (N=22) | 3.0 | 3.1 | 2.7 | 1.3 |
| Stedwick (N=21) | 2.7 | 2.5 | 2.6 | 2.6 |
| Takoma Park (N=24) | 2.8 | 2.3 | 2.4 | 2.2 |
| Twinbrook (N=22) | 2.7 | 3.6 | 3.2 | 3.0 |
| Whetstone (N=20) | 2.4 | 3.6 | 2.2 | 2.1 |
| Wyngate (N=26) | 3.3 | 2.9 | 2.9 | 2.8 |
| Total (N=135) | 2.8 | 3.0 | 2.7 | 2.3 |
| TOTAL (N=153) | 2.9 | 3.0 | 2.8 | 2.4 |

NOTE: Ratings were available on only the EA students.

TABLE B.4

Mean Scores on the Metropolitan
Achievement Test (Total Score) by School

| Schools | Early Admission | Grade 1 Comparison |
|---|---|---|
| Plan I | | |
| Total | 78.2 (N=18) | 80.6 (N=41) |
| Plan II | | |
| Cashell | 76.5 (N=22) | 100.3 (N=21) |
| Stedwick | 69.0 (N=21) | 95.6 (N=25) |
| Takoma Park | 59.3 (N=23) | 72.4 (N=22) |
| Twinbrook | 65.4 (N=20) | 72.9 (N=24) |
| Whetstone | 60.4 (N=17) | 107.8 (N=17) |
| Wyngate | 82.3 (N=26) | 98.6 (N=25) |
| Total | 69.6 (N=129) | 90.6 (N=134) |
| TOTAL | 70.6 (N=147) | 88.2 (N=175) |

TABLE B.5

Mean Scores on Early Childhood
Checklist (Grand Totals) by School

| Schools | Early Admission | Grade 1 Comparison |
|---|---|---|
| Plan II | | |
| Cashell | 35.2 (N=22) | 54.6 (N=21) |
| Stedwick | 41.4 (N=21) | 49.1 (N=25) |
| Takoma Park | 31.2 (N=24) | 43.4 (N=22) |
| Twinbrook | 43.2 (N=22) | 52.4 (N=24) |
| Whetstone | 33.3 (N=20) | 47.0 (N=19) |
| Wyngate | 52.1 (N=25) | 54.9 (N=25) |
| Total | 39.6 (N=134) | 50.3 (N=136) |